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RETROSPECT

OF

PRACTICAL MEDICINE AND SURGERY,

BEING A

HALF-YEARLY JOURNAL,

CONTAINING A RETROSPECTIVE VIEW OF EVERY DISCOVERY AND PRACTICAL IMPROVEMENT IN THE MEDICAL SCIENCES.

EDITED BY
W. BRAITHWAITE,
SURGEON TO THE LEEDS GENERAL EYE AND EAR INFIRMARY; AND LECTURER
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IN THE LEEDS SCHOOL OF MEDICINE.

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The New Editions of the First Three Volumes are now ready; and the remainder, which were out of print, will be re-printed with as little delay as possible.

Park-Square, Leeds,
June 20, 1845.

PRACTICAL MEDICINE,

&c. &c.

ART. 1.—ON SPINAL IRRITATION.

By DR. L. TÜRCK, Vienna.

[In a review of the work of this author in the British and Foreign Medical Review for January, opportunity is taken to place before the reader some of the most interesting observations which have lately been made on the subject of spinal irritation. The reviewer states, as an excuse for placing the subject before his readers,]

That the doctrine of reflex function, developed by Dr. Hall, and by some of the best physiologists of our own time, has not yet entered so deeply into the minds of the profession at large, as to extensively modify their views of the pathology and treatment of a certain class of cerebro-spinal affections, or to influence their practice.

The incident action of the nerves on the spinal cord and brain, whether in exciting or paralysing, has long been known. Whytt inferred, from some experiments with opium on frogs and dogs, that "not only those nerves, to which opium is immediately applied, are rendered incapable of performing their office, but that the brain, spinal marrow, and whole nervous system are affected in the same manner, *solely* by the action of the *opium* on the nerves which it touches. For its effects upon dogs are too instantaneous to allow of the supposition, that the more subtile parts of this poison are received into the blood, and by that means are conveyed to the brain; and in frogs, after the heart is taken out, and consequently a stop put to the circulation, yet a solution of opium, injected into the stomach and intestines, has the same effect, as when these animals are entire." We quote from his 'Remarks on the Sympathies of the Nerves,' and he details many "sympathies" of the nerves, as, for example, "the contraction of the pupil is not owing to light acting as a stimulus on the iris, but solely to the sympathy between this membrane and the retina," or in Hallian phraseology, the retina is incident excitor to the motor nerve of the iris. And it is to be observed, that although he does not explain, nor attempt to explain, the mode in which this sympathy or *connexion in function* occurs, he makes no error in the classification of his facts. The principle of irradiation of sensation will explain them all.

[This, continues the reviewer, had previously been explained and illustrated by Hoffman, Boerhaave, and others. Burns, in his 'Principles of Midwifery,' says "that many diseases, supposed to arise from local causes acting directly on the organs affected, do often proceed from disordered states, or preternatural excitement of some portion of the spinal cord. Even inflammation of these organs may be thus produced." And, as the reviewer says, "the preternatural spinal excitement" of Burns is simply the spinal irritation of more modern pathologists.]

We would first, however, revert to certain established principles in neurology. Pain may be produced in various ways. First, the termination of the sensitive nerves may be so altered by mechanical or physical changes, that pain shall be excited. Thus act the capillary tension in inflammatory affections, and the disruption of the molecules of the nerve by pricking, tearing, burning, &c. But the change thus begun at the terminating molecule must pass on along the trunk of the nerve from molecule to molecule, until it arrives at the central axis; the whole chain is brought into operation. That is one and the most common mode in which pain is produced. But the painful change may be commenced in any part of the course of the nerve; either on the fibril or within the ganglia through which it passes: in this case the painful sensation is referred, not to the point at which the change commences, but to the point at which the nerve terminates. It is thus that persons who have had a limb amputated, and subsequently a morbid growth on the cut end of the nerve, have experienced the most excruciating neuralgia and painful convulsion, apparently in, and referred to, the skin and muscles of the limb long since severed from the trunk.

The morbid change in the course of the fibril may not be, however, so extensive as to cause pain, *per se;* it most usually is not; but it is just so great as to magnify ordinary impressions and render them painful; it acts as a physiological magnifier. It is thus that in cases of spinal irritation, the slightest touch--not pressure,—but the touch of a feather will excite exquisite pain, and this followed by reflex acts.

If we carefully analyse the symptoms observed in well-marked cases of spinal irritation, we shall find that they can all be elucidated on the supposition, that there is a centric change so operating as to exalt the functions of the cerebro-spinal axis. This change can scarcely be considered strictly structural, because we know that structural changes are marked by anæsthesia, or paralysis: on the other hand, we know that the circulation may be the medium through which the actual change is induced. Opium renders frogs tetanic, as strychnine acts on man and lower animals; the slightest touch of the surface in poisoning by strychnine is sufficient to excite convulsions. The poison of the rabid dog so exalts the functions of the incident excitor and reflex motor nerves of the respiratory and spinal ganglia, that a breath of air on the face will excite a convulsive gasp and general spasms. In "spinal irritation" the change is probably in the capillary circulation: 1, of the cerebro-spinal axis; 2, of the ganglia of the sympathetic, or ganglia of the posterior spinal nerves; and 3, of the fibrils of the nerves themselves. This purely functional derangement of the nervous system has been termed neuræmia by Dr. Laycock, one of the recent English writers on this subject before mentioned, and the class of diseases to which it gives origin, neuræmic. (British and Foreign Medical Review, vol. XI, p. 66.)

It will thus be seen that the exciting causes of the phenomena of cerebro-spinal irritation may originate diversely. The exaltation of function of the cerebro-spinal ganglia may be induced, firstly, by the reaction of diseased viscera upon the central axis. It is thus that the cramps in diarrhea, and other intestinal affections, and paroxyms of insanity or delirium are induced. Secondly, the membranes of the spinal cord may be congested, or in such a morbid state as to act on that portion of the axis, as meningeal excitement acts on the brain. It is extremely probable that this is a frequent cause of spinal irritations in persons of an arthritic taint. Thirdly, the nerves passing from the spinal axis, or the ganglia or the posterior roots, may be liable to an influence similar to that just mentioned; and in either case, with results not unlike those of irritation of the cord proper. Fourthly, a morbid condition of the blood circulating through the central axis, may be the exciting cause of the chain of morbid phenomena. This morbid state may itself depend on various causes. It may depend on deficient depuration from a deficient action of excretory organs, as the kidneys, liver, or colon; or on the entrance of a poisonous matter into the circulation from without, or the blood may be in an abnormal state, in consequence of defective assimilation, or, as frequently happens, from sudden and profuse sanguineous discharges.

If we were to attempt an illustration of our remarks as to the diagnosis, we could not take a more apt instance than that of abdominal tenderness. Where it depends on spinal irritation, it will be found that the history of the patient presents instances of her having previously suffered from neuræmic affections. The affectible state of the cutaneous nerves of the abdomen is never observed to occur alone, the nerves of the abdominal viscera suffer also. The kidneys, for example, secrete less or more urine than natural: if less, the deficiency amounts occasionally to complete ischuria; if more, the urine is pale and diabetic. And so there is one or other of the two opposite states of constipation and diarrhea, but more usually constipation, with spasm of the colon, giving rise to colic. In the more aggravated cases, the motor nerves of the large intestines, bladder, abdominal parietes, and lower extremities, are also affected; and tympanites, vesical paralysis, constipation, and paraplegia ensue. The tenderness experienced is not simply tenderness on pressure, but it is a tenderness to the slightest touch, and when there is spinal tenderness, for it is not always present in these cases, the tenderness is of the same kind. We believe there is much error current on this point: writers continually writing about " tenderness on pressure," in cases of (the so-called) spinal irritation, when in fact the tenderness is manifest on the touch of a feather. The abdominal tenderness of peritoneal or visceral inflammation differs altogether from the preceding, both in its history, and concomitant symptoms. It is rarely seen in neuræmic females, except when the cause is quite manifest, as for example, when there is chronic structural disease of the peritoneum or abdominal viscera, accompanied by inflammation, or when it appears in parturient females as a symptom of metritis. We believe the neuræmic state is rarely coincident with structural disease within the abdomen, or terminates in it.

The accompanying phenomena differ widely: in the tenderness from peritoneal inflammation it is impossible not to be struck by the peculiarly haggard expression of countenance of the patient; in neuræmic tenderness, the expression is rather that of peevishness and pain than of mortal suffering. In the latter, there is rarely or never, the grass-green vomit observed in peritonitis; the pulse too is fuller, rounder, and larger, nor are the knees of the patient drawn up as in peritoneal inflammation: in the latter, tenderness on pressure, and not tenderness to the touch, is the distinguishing characteristic.

The diagnosis of all neuræmic affections, whether their seat lies in the head, thorax, or abdomen, is, *mutatis mutandis*, precisely similar. The previous history of the patient, and the physiological character of the symptoms themselves will almost always enable the practitioner to decide. Inflammatory diseases of the heart, lungs, and brain, are peculiarly liable to be confounded with neuræmic affections of those organs.

With respect to the treatment of cases of cerebro-spinal irritation we would above all observe, that it must be constitutional. They principally occur, idiopathically, in females whose parents are gouty, and of the nervous temperament, or at least who have themselves suffered from affections of the nervous system. Neuræmia of the cerebral and spinal ganglia is not unfrequently seen in females, one or other of whose parents has been insane. This we believe is extremely usual, and the fact is of importance both in the diagnosis and treatment of the affections of all the viscera in connexion with the spinal cord. While remedies suitable to the constitutional peculiarities of the case are administered, endermic medication, on the principle of incident excitor action, will be found of singular benefit; even the metallic neurines, as arsenic, may be thus employed with safety and efficiency. We would conclude this short sketch of the treatment, by the observation that no plan whatever will be successful unless the hygienic condition of the patient, namely, the condition as to mental occupation, sleep, diet, pure air, sufficient light, and exercise be strictly attended to.

British and Foreign Medical Review, Jan., 1845, *p.* 98.

2.—ON THE INDIAN HEMP.

By M. Donovan, Esq., Dublin.

[Mr. Donovan sowed some hemp-seed at the proper season, which ripened in the beginning of October. He made a tincture, four ounces to one pint of rectified spirit.]

The expressed tincture was allowed to evaporate spontaneously until very little remained, and that was dried by a gentle heat; it weighed 53 grains. Having diffused the mass in an ounce of diluted alcohol, says he, I swallowed first half a drachm, then a drachm, then two drachms, and lastly half an ounce, all within two days, but no effect of any kind followed. In the last dose there were twenty-eight grains of solid extract; one grain of resinous extract of Indian hemp, if of good quality, would produce powerful effects. I therefore conceive that domestic hemp is thus proved to be destitute of the principle which renders the Indian plant so desirable an excitant to the voluptuous people of the East. Indeed hemp might be expected to fall under the general law, that in hot climates all plants are more sapid, odorous, and resinous.

[Mr. Donovan details several of the cases related in Dr. O'Shaughnessy's essay, to show that the effects of the real Indian hemp are very different when used in India, however modified the effects may be when used in this country.]

In several cases of acute and chronic rheumatism, says Dr. O'Shaughnessy, half-grain doses of the resin were given, with closely analogous effects,—alleviation of pain in most, remarkable increase of appetite in all, unequivocal aphrodisia, and great mental cheerfulness. In no one case did these effects proceed to delirium, nor was there any tendency to quarrelling. The disposition developed was uniform in all, and in none was headache or sickness of stomach, a sequel of the excitement.

[In a case of *hydrophobia* Dr. O'Shaughnessy found that it mitigated the sufferings of the patient, although he was not sufficiently experienced in the dose necessary to be given in such cases. In future cases he would recommend the resin in soft pills, to the extent of ten to twenty grains, to be chewed by the patient and repeated according to the effects.

In *cholera*, ten drops of the tincture every half-hour were found to check the vomiting and purging, and bring back the warmth to the surface.

In *tetanus* Dr. O'Shaughnessy also found this remedy to be remarkable. In a case of Dr. Egerton's, produced by cauterization (by a native), on the back of the wrist, two grains of the hemp resin were given every third hour, and at length three grains every second hour, with complete success, as far as the tetanic symptoms were concerned, although the ulcer on the wrist spread and the patient died of exhaustion. Other cases of a similar description are related, in one of which 134 grains were consumed in about a month. Mr. O'Brien, in several cases which seemed hopeless, gave the medicine in *ten grain doses* dissolved in spirit. The effect was almost immediate relaxation of the muscles and interruption of the convulsive tendency.

After giving several other very interesting cases from Dr. O'Shaughnessy's scarce essay, Mr. Donovan proceeds to relate his own experience of the powers of the Indian hemp.]

Having procured several samples of Indian hemp, I made a tincture from one of them by digesting, with heat, sixty-four ounces of the dried summits in two gallons of rectified spirit. Of this, some was reserved for use, and the rest was converted into the resinous extract by evaporation at a very low heat. Samples of resinous extract were obtained from various other sources, as also a sample of *Churrus;* and I distilled a spirit and a water from the dried summits of the plant itself.

My next object was to test the powers of these various forms. Of the distilled spirit I swallowed six drachms without effect ; the distilled water had no more power; but it was thus proved that the process for procuring resinous extract does not expel any of the active principle. After a few preliminary doses, I swallowed three drachms of the tincture of the herb (containing four grains of resin) without the least effect. On different days, I took four grains of each of the samples of resinous extract, and found them equally powerless. In fine, all the Indian hemp and all its preparations, of which I could at that time obtain samples, were so inferior in power, compared with the energy of those employed by Professor O'Shaughnessy, that it became obvious how much the plant suffers from age, from being collected at an improper season, or from careless manipulation. When the medicine fails we are therefore to be cautious in pronouncing a general censure, the particular sample employed being, perhaps only to blame.

For want of better, many of the cases that follow were treated with the above-mentioned preparations. But fortunately I at length procured a quantity of the true resinous extract, prepared at Calcutta, under the immediate inspection of Professor O'Shaughnessy, the energy of which was such that half a grain was a powerful dose.

In the following reports of cases, reference is made to the preparations that were accessible to me at the time, and they are distinguished by peculiar names—namely, *weak* resinous extract," of which, as already mentioned, four grains were a powerless dose; the "tincture of the summits of the herb," of which three drachms were of no greater efficacy; the "strong resinous extract" of which half a grain was a powerful dose; and its tincture, containing two grains to one drachm of rectified spirit, which is designated "the strong tincture."

The interest which I took on this subject was not a little enhanced by anticipation of the benefit which I expected to derive, personally, from the medicinal powers of Indian hemp; and I resolved to give it a full trial on myself previously to proposing it to others. My case is as follows:—From early life, I have occasionally suffered from a pain of a neuralgic character, the seat of which, at different times, was the heel, the ankle, the sole, the instep, and sometimes the back of the thigh. The attack generally lasted one or two days, but sometimes a week; then went off, and returned every four or six months. The pain, always severe, was sometimes most excruciating. There was never the slightest redness, tumefaction, or heat, in the part affected. It was not a continuous pain, but recurred in vibrations, at intervals of half a minute, which made me writhe with agony. During these intervals, a touch would instantly bring it back. The pain was generally the precursor of some change of weather.—Four grains of opium did not produce the smallest alleviation: nor had any medical treatment the slightest effect. Sometimes an interesting conversation, or the performance of music, would subdue the pain, but it always returned. Very strong tea or coffee generally afforded me two or three hours' respite. But my ultimate resource was immersion of the limb in a bucket of cold water, and this was a never-failing source of relief, perfect when the water was abundant and dead-cold.

Having determined to try Indian hemp, I swallowed, during one of these attacks, five drachms of the same tincture of the herb which, in a dose of three drachms, had formerly proved powerless. In twenty minutes, I was agreeably surprised to find myself without pain; although for the last four hours I had suffered severely. There was this peculiarity of the relief obtained, that I walked without much consciousness of the motion of my legs, or indeed of having legs at all: I felt as if they did not belong to me.

In some months after, while suffering under a severe attack of pain in the foot, I took nine grains of *weak* resinous extract of hemp, which had not the slightest effect. Next night, I took six drachms of the weak tincture of the herb, without the least benefit. The third night, being in exceedingly great torture, I took twelve grains of the same weak resinous extract: in twenty minutes I was nearly free from pain, went to bed, and slept soundly four hours. The pain then awoke me, but it was much less severe. In the morning, there was neither headache, nor any other inconvenience.

Considerable pain having returned the fourth night, I took twelve grains of the same extract: soon fell asleep; and awoke, after two hours, free from pain. The fifth night, the pain being somewhat troublesome, and wishing, more for experiment than through necessity, to try the effect of a larger dose, I took fourteen grains of the same resinous extract. About five o'clock in the morning, I awoke to encounter a most extraordinary scene,—one, of which words can give but a faint description. I felt a rush of strange sensations through my head, accompanied with a crackling and singing noise, and a vibratory motion through my whole body. These gradually subsided; and while dozing off, I thought an explosion took place in my head, followed by the same rushing noise and vibration as before, and afterwards by a strange metallic sound. Various other noises succeeded. My sense of touch and feeling had become gradually more and more obtuse, until at length I lost all feeling, unless I pinched myself severely. The effects were now at their height, and the consequences were surprising. I absolutely lost the consciousness of having a body, and my corporeal existence appeared to be comprised within my head, and a small portion of my chest, near the throat; in these spots, I felt as much alike as ever, but all other parts were without feeling, and to my perceptions annihilated. My intellect was not in the least disturbed; memory was as good as ever; I reasoned well enough; was conscious of external objects as in perfect health: but I had some notion that if I gave way to sleep, I should never awake in this world; yet, strange to say, I felt perfectly resigned to this sudden termination of existence.

Is it surprising that a medicine which temporarily destroys sensation should subdue the most intense pain, as it did in my case, and even permit pleasurable affections of the mind, which would perhaps always exist but for the antagonizing influence of the annoyances incidental to life ? For my own part, I sought in vain for even the slightest traces of that exhilaration which is represented as so delightful by consumers of this drug.

These singular affections gradually passed off; on attempting to get out of bed, I could scarcely walk for giddiness; my stomach became sick, but on returning to bed I soon recovered, ate an immense breakfast, and remained perfectly well, without having experienced any of those inconveniences which succeed relief obtained from opium.

In the spring of this year, having had very severe pain for several days, and having taken eight minims of the *strong* tincture (made from two grains of the strong resinous extract to one drachm of rectified spirit, as above described) night and morning for three days, without any effect, on the morning of the fourth day I took fifteen minims. In about two hours I was under its influence; every time I stirred my head the walls of the room appeared to turn round; the mouth and fauces were parched; my articulation became indistinct, my thoughts muddy and slow in succession. With great doubts that I could walk properly, I went into the air, by which I found myself restored, and remained so while walking; but on coming home and sitting down, all the effects returned. This happened twice. On returning home my memory was so much affected that I could not recollect where I had been. The pain had passed off, and did not return.

About midsummer I got another attack, the pain of which became intolerable. I took thirty minims of the same tincture, without the least benefit, and in six hours took fifteen more. In half an hour the pains suddenly ceased, but in half an hour more began to return, although in a bearable degree: my head became giddy and remained so for twelve hours. The pain wore off by degrees. Had I taken the two doses together, their conjoint effect would probably have diminished the pain.

Under the conviction that the pains would be more easily subdued by having immediate recourse to the medicine, I, when next attacked, took forthwith fifteen minims of the tincture, and in half an hour was perfectly free from all suffering. In three hours I became giddy, confused, and almost incontrollably drowsy. On attempting to read, I was obliged to desist, not being able to carry the sense from the beginning to the end of the sentence. After continuing free from pain for nearly twelve hours, the stinging returned and became very distressing, a repetition of my dose produced very little alleviation; nor was there any considerable effect until next morning, when, on attempting to rise, I became giddy and sick, and fell into a cold perspiration; but, on lying down, all the symptoms vanished, except the pain, which soon became violent, and did not cease for four hours.

[Mr. Donovan next relates a great many most interesting and satisfactory cases in which this remedy was more or less remarkable, and ends his valuable essay by the following observations:]

In the foregoing details, I have not made a *selection of the successful cases out of many*, but have faithfully recorded *all* those that came under my observation, of which the termination was distinctly known. It may be seen that far more than the majority of them were cured evidently by the agency of the hemp, and that all the rest were more or less relieved.

It is now necessary to make some general observations on the qualities of this medicine. I am of opinion that of all the preparations mentioned in the foregoing essay, the only one to be relied on is the tincture of the resin prepared in India from hemp collected at the proper season. I say the *tincture*, because the resin itself, being totally insoluble in watery liquids, is best administered in the state of solution: in the pillular form, it is likely to pass undissolved through the intestinal tube. Mr. Richard O'Shaughnessy found that a drachm of tincture, which was only equal to three grains of the resin, had a much more decided effect than five grains of the latter. The strength which I employ, and of which I have made a large quantity, to guard against the variability of new samples, is two grains to one drachm of rectified spirit. The source of the variation of strength alluded to, would be a softer or harder consistence of the resin employed, giving rise to an enormous and dangerous difference of power: other sources are the collection of the herb at an improper season: the decay of the herb by long keeping; bad management of it in drying, &c.

As to the modes of administration, I have tried many, and find the following to be the best:

℞ Tincturæ resinæ Cannabis Indicæ minima quindecim. Spiritus Rectificati minima quadraginta et quinque. Misce; fiat haustus.

The patient should be directed either to swallow the whole of this directly from the bottle to avoid loss, or to pour it into a little water, and *instantly* swallow it off. If not instantly, the resin will be precipitated, will adhere to the vessel, and thus escape being swallowed. This always at length happens when the prescriber directs water to be mixed in the draught by the apothecary, and I have seen several, disappointments in consequence The form of emulsion does not succeed, for although the resin is at first diffused, it sooner or later separates. The practitioner should never prescribe drops: he who supposes that drops and minims of this tincture are equal, labours under a dangerous misconception, for 60 minims (that is one drachm) are equal to 140 drops from a small bottle. He should be also on his guard to order tincture of the resin, lest tincture of the herb be used, which in small quantities is powerless.

The effect on the sensorium, produced by this medicine, is generally alarming to the patient as well as to the bystanders, unless they were previously made aware of what was to be expected. Some patients evince great terror of death, but on recovering from the fit of narcotism, they laugh at their fears, and are generally ready for another trial.

Dublin Journal of Medical Science, Jan. 1845, *p.* 368—402—459.

3.—ON THE ACTION AND EXTERNAL USE OF ACONITE.

By Richard Eades, M.B.

[Dr. Eades laments very much, that the distinction between sedatives and narcotics is not more clearly defined, and remarks, that from the terms sedative, anodyne, soporific, and narcotic, being indiscriminately used by authors, the object of their treatment, or the treatment itself, is frequently rendered obscure, if not doubtful. He then says:]

I have been induced, therefore, to make the foregoing remarks, 1st, because I have been frequently left in doubt as to the object of treatment when general terms have been adopted, and the particular intention of their exhibition not been defined; 2nd, because the substance aconitum, of which this Article treats, is generally grouped among narcotics, although it does not *stupify*, cause sleep, nor produce (directly) *convulsions;* 3rd, to prevent any misunderstanding of the action of this substance, so far as our knowledge goes, I am anxious to have it classified among the *cerebro-spinants*, or "those agents," to use the words of Pereira, "whose primary and specific effect is a disorder of one or more of the functions of the cerebro-spinal system. To this class, therefore, are referred all those substances which occasion sleep, insensibility, erroneous perceptions, judgments, and volitions, or delirium, stupor, or coma, paralysis, convulsions, &c.

The cerebro-spinants are subdivided according to the nerves, motor or sentient, which they more particularly affect, or the systems upon which they more decidedly display their action. Thus Pereira places aconitum amongst those cerebro-spinants which cause paralysis of the nerves of sensation."

[Being anxious to discover how far the definition of its being a paralyser of the sentient nerves, Dr. E., with this view, made some experiments with aconitine upon animals, the results of which were "sufficient to show, that aconitine acts as a paralyser of the nerves of sensation, and does not cause stupor or convulsions; when the latter occur, they take place a short time previous to death, and appear to be caused by a want of due circulation in the brain."

The first case in which Mr. E. tried this remedy externally, was a "Mrs. H., of nervous temperament, married 6 years, had several miscarriages, caused by a morbid irritability of the sacral nerves." The form used, was the tincture of the root as an embrocation with tincture belladonna—ʒii. of each in ℥iv. of rose water.]

To have a couple of tea-spoonsfuls rubbed upon the sacrum, inguinal regions, and inside the thighs. In the course of a few minutes there was a complete suspension of pain. For five months she had every fourth week these attacks, and frequently in the interval sudden and severe excitement. It was such attacks as these which caused her former miscarriages, and after the sixth week of gestation, they always excited uterine pains, with more or less of a 'bearing down' sensation. Desirous of trying the aconitum alone, I ordered an embrocation containing four drachms of it, omitting the belladonna; equally happy results followed the use of this, but she complained of a numbness, almost amounting to a loss of feeling, in the parts to which it had been applied. I found that belladonna, when used alone, whether in the form of embrocation or a plaster, to the sacrum, gave no relief. At the expiration of the fifth month these pains returned no more; she arrived to her full time, and became the mother of a strong healthy child.

[The second was a case of neuralgic attacks in the gums, jaws, and cheeks. As the patient was disposed to dyspepsia, these were supposed to be merely secondary, and the ordinary treatment was tried without effect. The tinct. aconite lotion, ʒi to ℥i was then ordered as a gargle; and also to be applied externally to the cheeks; after a few applications, this treatment succeeded perfectly, the pains not having returned for 8 months. In the next case, a]

Mrs. W., æt. 22, married, of a nervous temperament, but very healthy, the mother of one child. About the third month of her pregnancy, she experienced, from no assignable cause, acute, starting, superficial pains over the hypogastric region; they increased in intensity, and excited such uterine pains, that she feared she was about to abort.

The same lotion was used as in the last case, rubbed on the sacrum as an embrocation, and applied by means of moistened lint.

From the first application she found much relief, and in the course of a few hours, when the embrocation had been used three times, all pain ceased; she had a few slight returns during the two or three days, which disappeared on the application of the lotion; she also (as in the case of Mrs. H.) complained of numbness, and considerable loss of sensation for some days, over the parts where the lotion had been applied, stating that 'she could not feel her clothes upon her.' She has had no similar attack since.

Dr. Eades has received accounts of cases where it has been tried, and one is mentioned which was communicated to him by a medical friend, of apparently pure neuralgic pain over the left eyebrow, "which occasionally extended over the same side of the forehead and temple, and also down as far as the zygomatic arch."

After a little aperient medicine had been given, bark was tried, together with leeches over the orbit, with hardly any good effect; the tinct. aconite was then tried per se, and the pain very soon yielded.]

Of the preparations of aconite, the tincture of the root and the alcoholic extract are the most to be depended upon. The preparations, as ordinarily met with, are not to be relied upon. It is the alcoholic extract of the leaves which Dr. Lombard of Geneva has, with success, administered internally in rheumatic affections. From my own observation, I think it is not so strong as the tincture of the root. Dr. Moore, of Anne-street, very carefully prepared the alcoholic extract in the summer of 1842, according to the formula of Dr. Lombard, but as an external application it did not appear to be as active as the tincture of the root. In general one may form a pretty correct opinion as to the probable strength of the preparation, by the tingling sensation it produces upon the lips, and the degree and duration of numbness which follows. Those preparations which do not produce both these effects I have found to be almost inert.

[Mr. E. concludes by saying:]

From my own observations, I would thus sum up the most remarkable symptoms, as exhibited by animals: weakness, staggering, gradually increasing insensibility of the surface, slowly increasing weakness of the voluntary muscles, ending perhaps in paralysis, great languor of the pulse, more or less blindness, and convulsive twitchings before death.

Dublin Journal of Med. Science, March, **1845, *p.* 55.**

4.—ON THE SOURCE OF CONVULSIONS.

By T. Wilkinson King, Esq.

It is a little remarkable, that hitherto there has been no settled opinion in the profession, as to the primary seat of derangement in convulsive affections. Dr. Hall and some others, seem to refer the spasms to general disorder of a specific nature in the spinal marrow. Others impute them rather to meningeal or to superficial affections of the cerebrum.

Convulsions, which leave the patients as well as ever, even after many attacks, cannot be expected to have any visible permanent local alteration connected with them.

In the first place, I shall proceed to show what I have concluded the pons varolii has to do with convulsions—for, here, all motor tracts converge—and, here, one thrust, as it were, may stir up every muscle of the body.

I assume that no affection of bone, nor, indeed, any meningeal affection, necessarily affects brain or nerve; and I could almost add no tumour. I see that all the affections here named begin and go on to a great extent without nervous symptoms, and that the signs of nerve-disease, when they do supervene, proceed independently, and without any strict relation of duration, degree, or consequences, to the extraneous disorder. I find, moreover, two sets of real nerve disorders, *i. e.*, 1stly, with a palpable cause and a definite site; and. 2ndly, devoid of visible local change; and I cannot doubt but that some of the latter are fairly illustrated by the former. A new and gradual growth deranges no nerve fibre—a strumous tubercle in the thalamus gets large, unsuspected; and consequent affections of the opposite arm come and decline variously, according to the varying incidental changes in the brain, around the tubercle. Such a body, in a renovated constitution, rather wastes, turns to cholesterine, and may be unheeded through a long life. Strumous, cancerous, inflammatory, and apoplectic diseases of the brain are occasionally found to become arrested at every stage of their course, as when wasting or other disorders, elsewhere, come into greater activity.

On the other hand, I think it is, in the main, pretty certain that cysts, tumours, inflammations, softenings, extravasations, whose size or extension may gradually encroach on the pons, induce convulsions before the final coma—a certain state of injection, or nutrition, or of nerve-irritation, preceding total oppression.

Every known disorder of the spinal cord causes lesions of motion (rigidity, spasm, or palsy,) and of sense (pain darting, or numbness,) in proportion to its severity, and only in parts *below* the seat of the disorder; but, if these affections involved the excitor cords of some physiologists, surely we should have universal disturbances.

The convulsions of known spinal diseases are all comparatively limited or insignificant.

To what nervous lesions do we not look, for most general palsy, or tremor? As disease approaches the centre of the pons, so general convulsion or fatal paralysis attends. Slow tumours thus indicate the site of the transitory actions which cause convulsions. The same diseases in the cerebrum, cerebellum, and spinal marrow, cause no general convulsions. These assertions I hope to make good. If any one should think he can do as much in opposition, I can only wish to see it.

1. *There are various diseases of the cerebrum, which, approaching the pons varolii, produce convulsions, first of the opposite side of the body, and then generally.*

2. *There are various diseases of the cerebellum, which, gradually advancing upon its crura, &c., cause convulsions, first of the opposite side of the body, and then generally.*
3. *There are various diseases of the tubor annulare itself, which, in their course, usually set up universal convulsions.*
4. *There are some exceptions to the above statements, but the consideration of them rather illustrates than refutes the main principles advanced."*

Medical Times, Oct. 26th, 1844, *p.* 76.

5.—TREATMENT OF TRAUMATIC TETANUS.

By JAMES MILLER, Esq., Professor of Surgery in the University of Edinburgh.

[The case which calls forth the following comments, by Mr. Miller, was that of a girl of seven years of age. We refer to it in this place chiefly to show the value of the *Indian Hemp* in its treatment. The wheel of a cart had passed over the middle finger of the right hand, and of course had inflicted a severe injury. Tetanus gradually made its appearance.]

The peculiar risus had begun; the jaws were clenched; the masseters and temporals were tense and hard, and the seat of much pain; the limbs, especially the upper, were becoming rigid; the abdominal parietes were hard; the least exertion, such as endeavouring to open the mouth, and show the tongue, induced aggravation, with marked opisthotonos; and then, too, pain was complained of, not only in the jaws, but in the back.

The finger had never promised well for satisfactory recovery; and I had no doubt as to the propriety of its immediate sacrifice; being well aware, that although in it resided the exciting cause of the formidable train of symptoms fast setting in, yet that removal of this could be expected to prove beneficial, only at a very early period of the case, ere the spinal cord had been all but irretrievably involved. Amputation was accordingly performed, with as little delay as possible, at the metatarso-digital articulation. Little pain was complained of; and blood flowed but sparingly. I abstained from deligation of any vessels; partly, because a moderate loss of blood might not be without its use, at this the commencement of the treatment; but chiefly, because I was anxious, by avoidance of the use of ligature, to leave the wound in as favourable a state as possible,—free from all source of further irritation. For a like reason, no stitches were employed; sufficient approximation being effected by tying the adjoining fingers together by a slip of bandage.

[Water dressing was applied, and 20 drops increased to 30 drops of the tincture of Indian hemp every hour or two, were administered. The further account and result of the case will be best seen in the following remarks by Mr. Miller:]

Perhaps the first questions which present themselves, in regard to the foregoing case, are—was this an example of *acute* tetanus? or was it, from the beginning, of the *chronic* character? According to my own conviction, I have no hesitation in answering the former question affirmatively; and the latter, by a negative. And this I do on the following grounds:—1st, The case was traumatic: the affection, following a wound, is usually acute. And, in this instance, the accession was at the usual time, and in the usual way. 2nd, The symptoms, *at first severe*, gradually, yet very perceptibly, gave way before the treatment employed. The trismus, opisthotonos, and rigidity of the upper extremities, as well as of the abdominal muscles, were at first great, and underwent frequent and cruel exacerbation; and these aggravations were induced by the slightest exciting cause. Rigidity gradually relaxed; and the exacerbations became less painful, less frequent, and less easily induced. 3rd, During a temporary interruption of the treatment, the symptoms threatened to return to their original severity; and again yielded to the resumption of the appropriate remedial means.

Then, as to the treatment. For some time I have been satisfied, that in the treatment of traumatic tetanus, the most likely means of relief are to be found,—1st, In early amputation of the injured part, or isolation of it from the general nervous system by suitable incision on the cardiac aspect; 2nd, In effectual and early evacuation of the bowels, and maintenance of free movement in them; 3rd, In maintaining a sedative effect on the nervous centre implicated in the disease, by cold applied to the spine; 4th, In the continued use of some one remedy calculated to allay muscular spasm—perhaps aconite, Indian hemp, or tobacco; 5th, In careful administration of nourishment, so as to husband the strength as much as possible; 6th, In maintaining quietude, and avoiding all excitement likely to induce aggravation of the spasm.

1. As already stated, there could be no doubt as to the propriety of amputating the offending part in this case; and the operation was accordingly performed, as soon as the tetanic symptoms were fairly declared. The comparative absence of pain and bleeding, during the incisions, was characteristic of the disease.

The nerves of the removed finger were examined by Mr. John Goodsir, and found imbedded in dense inflammatory exudation—themselves expanded in bulk, and presenting the appearance of considerably increased vascularity.

Were a similar case of injury to present itself, with like tendency to spasmodic flexion of the parts implicated, I should be inclined to regard that symptom as ominously premonitory, and should feel called upon, by early amputation, to sacrifice the part, even though it might otherwise afford good prospect of its own recovery.

2. The first prescription was a full dose of calomel and jalap, while the power of swallowing was yet comparatively free. It answered well, bringing away much fœtid and dark-coloured matter from the bowels, as usually happens in such cases. Sufficient action was afterwards maintained by enemata, containing turpentine and tincture of assafœtida.

During convalescence, a marked perversion of the intestinal secretions persisted, and was got rid of only by a corresponding continuance in the use of alterative aperients.

3. Since the perusal of a case of hydrophobia, treated by Dr. Todd, of King's College, London, and published in the *Lancet*, No. 960, p. 583, I have felt very hopeful of ice applied to the spine, as a remedial agent, not only in that disease, but more especially in tetanus. And I was determined to make trial of it on the first opportunity. Its action is obviously sedative on the nervous system ; powerfully and directly so. So soon as circumstances permitted, it was had recourse to in this case, and was maintained in constant, or almost constant operation for ten days; the bags of ice being laid along the whole spine, but with the chief effect directed on the upper part. Forewarned by the circumstances of Dr. Todd's case, I was prepared to use this remedy with much caution, aware that the sedative power might prove excessive, and might demand not only considerable intermission of the application, but a cotemporaneous use of general support, and perhaps of stimuli. I was surprized to find, however, that no occasion for either presented itself. The pulse kept low, certainly, and of but sparing strength, but not too much so. And the only complaint made of the application, by the patient, was the attributing to it the severe pain felt in the back, which was caused doubtless by the opisthotonos. When the symptoms had plainly begun to yield, the ice was discontinued; particularly as, about that time, tendency to free perspiration began to manifest itself.

Very shortly after discontinuance of the cold, two marked exacerbations occurred—at a time when these had greatly abated; but as there was no recurrence, I did not think it necessary to resume the application.

4. Of the three anti-spasmodics formerly enumerated, I was afraid of the tobacco, in so young a patient, having both seen and heard of its unmanageable action. Few will deny, that, with every precaution in its use, it has again and again seemed not remotely connected with the fatal issue; more especially in urgent cases of hernia. Of the aconite I had no experience, as an opponent of spasm. Of the cannabis I had; having used it in private practice. Besides, the report of Dr. Shaughnessy's success with this remedy, in at least mitigating the sufferings in tetanus, naturally leads to a prepossession in its favour, in an unprejudiced mind. I resolved to give it a fair trial. It was begun in a very moderate dose, which was gradually increased, until about three grains of the resinous extract were taken every half-hour—a full dose for an adult, in ordinary circumstances, without repetition. A few doses usually induced sleep, with marked mitigation of the spasm; and on the patient's emerging from the state of narcotism, the remedy was resumed, and steadily continued until a similar result was obtained. The period of narcotism, and consequent intermission of the medicine, did not usually exceed two or three hours. The sleep was deep and unbroken, and seemed to be refreshing. It certainly was

followed by no headache, or other apparent inconvenience. The eyelids were seldom, if ever, shut, as in ordinary sleep; but remained half open, disclosing the eyes, dull and upturned, and giving to the countenance a very peculiar expression. While the exhibition of the drug was at its maximum, great irritability and peevishness of temper was shown by the patient, during her waking moments; but it were, probably, unfair to attribute this to the medicine.

As the symptoms began to recede, the cannabis was proportionably diminished in dose. Ultimately, it was discontinued altogether, while yet a hardness of the abdominal muscles remained; it seeming, then to meet with comparatively little tolerance in the system, and to induce a quick and irritable state of the circulation. Throughout the whole period of its use, its effect on the appetite was most obvious; but greatest, as was to be expected, during convalescence. The craving for food, of all kinds, was stated to be, at times, absolutely voracious.

In this case the *tolerance* of the cannabis, engendered by the tetanus, must be apparent to every one. A slim girl, 7 years of age, took every half hour—and sometimes for many hours in succession —a dose of the hemp sufficient to throw a healthy adult into strong narcotism. Also, the unfavourable effects which commonly follow * experiments with it, on ordinary patients, whose ailments (if any) do not require the remedy—as headache, delirium, visions, vertigo, vomiting, palpitations, general feelings of great discomfort, &c.—seem to have been wholly absent in this case, where nature *demanded* the use of the medicine.

The Indian hemp I believe to be comparatively valueless, as an anodyne, as well as a hypnotic, *in ordinary circumstances;* and as such, I would not think of administering it. Its virtue seems to consist in a power of controlling inordinate muscular spasm; and the result of this case has certainly tended to confirm that opinion.

I shall not attempt to separate the various remedial agents employed; apportioning to each their share in the fortunate issue. I consider that the early amputation, and subsequent gentle treatment of the wound, may have done some good. I have no doubt that very great benefit followed on the due evacuation of the bowels. The cold to the spine may have been beneficially co-operating, perhaps in no inconsiderable degree. Yet, I am inclined to ascribe the greatest portion of the benefit to that remedy of which the system proved so remarkably tolerant,—the cannabis Indica.

5. The fifth indication of cure was never lost sight of. From the first, very strong beef tea was ordered to be always in readiness, and to be frequently administered. As the trismus yielded, and the power of swallowing was regained, ordinary food was offered in addition, and usually was taken with greediness.

6. In the open ward of a public hospital, it is not easy to obtain quietude for the patient, and avoidance of excitement to spasmodic aggravation. I have no doubt that, latterly, many of the aggrava-

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* See Dr. Lawrie, in Lond. and Edin. Monthly Journal, Nov. 1844, p. 939.

tions were attributable to the circumstance of this indication being necessarily so imperfectly fulfilled.

In conclusion, I would beg to state, that I have no wish to arrogate for the cannabis more virtue than what may seem its just due. The case *may* have been of a chronic character throughout, though, in my humble apprehension, it is very far from being apparent that such was its nature.

At all events, by this case, evidence as to the action of the cannabis Indica seems to be borne to the following effect:—

1st, It has the power—probably not slight—of controlling inordinate muscular spasm.

2nd, In tetanus there is a marked tolerance of the remedy; both as regards the safe exhibition of large doses, in frequent repetition, and the absence of such unpleasant consequences as the usual dose, in ordinary cases, is apt to induce.

3rd, With its anti-spasmodic virtue, *in appropriate cases*, it probably conjoins hypnotic and anodyne properties, though in a minor degree.

4th, It has the effect of remarkably increasing the appetite; and digestion does not seem to be impaired. The dejections, though dark and offensive, contained no unchanged ingesta.

5th, It does not induce constipation.

6th, On recedence of the tetanic symptoms, the dose of the medicine should proportionably decrease. The tolerance is passing off, and if the original dose be continued, some of the untoward effects are not unlikely to occur.

Lond. and Edin. Monthly Journal of Med. Science, Jan., 1845, *p.* 23.

[In a case of idiopathic tetanus which occurred in Guy's Hospital, and reported by Mr. Arnold, the symptoms were chiefly those which characterize this disease, and Dr. Babington prescribed the Cinnabis Indica as follows:]

Extract of Indian hemp, three grains; rectified spirit, half a drachm. Mix for a dose, to be taken every half hour in a spoonful of barley-water. *The effects of each dose to be carefully watched.*

The *first dose* was taken at twelve o'clock. At half-past twelve the pulse was 92, and intermitting. In a quarter of an hour after the *second dose*, the patient showed symptoms of excitement; his eyes brightened, and the masticatory muscles seemed to him to be less rigid; no priapism, but some little flushing of the face; pulse 102. A moisture on the face and hands now appeared, amounting, on the latter, to profuse perspiration, accompanied with tingling. Just before the third dose the pulse was 107, and still irregular; the rigidity, however, was decidedly less.—*Third dose.* He swallowed this better than the preceding.—*Fourth dose.* Respiration twenty-two; pulse 128; disposed to sleep.—*Fifth dose.* Respiration the same. He complains of pain in the back and occiput, and of lying, as it were, on something very hard; but he rests motionless, with composed features, and is drowsy. He swallowed this dose without much difficulty. At a quarter-past two (fifteen minutes after taking the dose) he fell into a quiet sleep. The dose of Indian hemp was now augmented to five grains in fifty minims of spirit, to be taken in barley-water every two hours. The sixth dose was taken at three o'clock. Respiration twenty; pulse 110, full and strong. He had a general perspiration, swallowed well, and said that the pain in the back and occiput was relieved; bowels not yet moved.

Ordered, at half-past four, a turpentine enema, and to continue the extract; and at eleven p.m., twelve grains of calomel.

May 3rd. Ten o'clock, a.m.—No dose had been administered from eleven o'clock on the preceding night, until two; and again at four, one was given. He has had in all forty-eight grains of the extract up to the present time, and has now just taken another dose. He dozed all night, but had no sound sleep. Bowels still constipated. Ordered, in the afternoon, an enema of turpentine, with two ounces of castor oil. To repeat the extract of Indian hemp every hour, and to have one plaster of this material placed on the chest, and another along the spine. The patient was at this time in nearly the same state as when admitted, but complained of greater pain in the lumbar and dorsal regions. No spasm in the extremities, but some numbness in the fingers. He feels that he has less power over himself than before, and cannot now turn in his bed. Perspires a great deal on the face and forehead, as well as on other parts; and the skin is warm, as well as moist. Pulse about 80, (though it varies considerably at different times,) regular, and strong. The patient does not swallow better than he did yesterday; there is a catching in the epigastrium when he swallows or speaks, though the ordinary breathing is more free than yesterday.

4th. Ten o'clock, a.m.—Bowels freely opened last night, and again this morning; motions are solid and shapeless, "just like a piece of liver" in appearance, and smell strongly of the remedy. He passed a very restless night. Great pain is induced by attempting to speak; the mouth is quite closed, and the disease appears to be slowly gaining ground; pulse 100, with less power than before. The patient complains of the medicine as burning his throat. Ordered six ounces of wine, and to continue the extract. Two p.m. Spasms in the trunk have grown stronger since the morning, and increased in frequency, occurring now about every five minutes, and sometimes apparently extending down the left leg, causing violent pain throughout the whole body, and occasionally jerking the patient off his back; pulse the same. At four, p.m., Mr. Stocker saw him, and ordered the extract of Indian hemp to be administered, in an injection of a pint of beef-tea and wine. This was done at the hours of four, six, nine, and twelve, (the last time with the addition of an egg;) and on the 5th, at two, four, and six o'clock, a.m.

5th. Eleven, a.m.—The injections have all been retained. He got a little sleep, at intervals, during the last night, and says that he is in less pain than yesterday, yet still complains of much pain about the mouth. The muscles of the face are less contracted, and the teeth can be separated to the width of about a quarter of an inch. He has a control over his arms and legs, and can draw the latter upwards; spasms less violent, though more frequent, occurring every two or three minutes; bowels confined; pulse about 100; more feeble; breathing easy. Ordered four ounces of brandy, with two eggs, in a pint of beef-tea, and a little decoction of starch, to be administered as an injection, every four hours. This was done at eleven, a.m., two, six, and eleven, p.m.; and on the 6th, at two, half-past five, and ten, a.m.

6th. Three, p.m.—Injections retained. Very restless all the past night; complains of feeling cold this morning, and drowsy; could not sleep, however, for the spasms, which have become stronger; there is more difficulty of breathing; but he retains the free use of his arms and legs. His mind has wandered at intervals during the day, but he now answers questions rationally; pulse 110, with some sharpness; much less perspiration to-day. He had, a little while since, requested to have a little brandy in barley-water, but the first gulp of it brought on a violent spasm, that prevented its being swallowed. Complains of the light and noise of the ward.

7th. Half-past twelve, p.m.—The injections have been continued. He craves after brandy, and the previous night some was given him in water, which he contrived to swallow; his mind rambled during the night, as it has during the day, but he answers questions rationally; perspirations returning, and spasms diminished; he can open his mouth better; pulse 120; bowels still constipated. Ordered the enema of turpentine and castor oil, as before, and to continue the Indian hemp. Two, p.m.—One injection had returned; the rest were retained. At six o'clock Mr. Stocker visited him: the spasms were again more frequent; the thoughts of the patient still wandered, but he protruded his tongue when told; pulse 160; powers rapidly declining; and at half-past two the next morning (May 8th) he died.

The exact quantity of the extract of Indian hemp administered. whether by the mouth or per anum. is ascertainable from the dispensary book, which shows that the following quantities were made up for this patient:—

May 2nd. Eleven, a. m.—Twenty-four grains. Four, a. m., twenty-four grains.

3rd. Nine, a.m.—Twenty-four grains. Four, p.m.—Forty-eight grains.

4th. Ten, a.m.—Forty-eight grains. Ten, p.m.—Twenty grains.

5th. Seven, p.m.—Forty-eight grains.

6th. Ten, p.m.—Forty-eight grains.

But, of the last-named quantity, thirty-six grains remained after the patient's death.

It thus appears that the total quantity taken amounted to two hundred and forty-eight grains. It was obtained from three several sources, in nearly equal proportions—viz., the first from Mr.

Squire, of Oxford-street; the second, through Mr. Pearce, from a gentleman who brought it from India; and the third from Mr. Rouse, in the Borough. The gentleman who supplied the second portion tested the effects of *one grain* on his own person: it produced the symptoms of intoxication, with the excitement common in that state, to such a degree, that it was found necessary to call in medical aid—a sufficient proof of the potency of his specimen of the extract.

Lancet, Dec. 14, 1844, *p.* 352.

[In an interesting paper on this subject, illustrated by numerous cases, Dr. Clendinning says:]

The objects I have had in view in the trials of the hemp above detailed (which, I may mention, are but a third or fourth part of the whole number of cases in which I have experienced beneficial effects from the new remedy) are these:—

1. To determine as nearly as I could, the question, whether the hemp narcotic be in reality possessed of medicinal properties sufficiently energetic and uniform to entitle the drug to admission into our pharmacopœia; and,
2. To determine how far the extract could be used with advantage as a substitute for opium in various important diseases, acute and chronic.

In answer to the former question, I have no hesitation in affirming that in my hands its exhibition has usually, and with remarkably few substantial exceptions, been followed by manifest effects as a soporific or hypnotic in conciliating sleep; as an anodyne in lulling irritation; as an antispasmodic in checking cough and cramp; and and as a nervine stimulant in removing languor and anxiety, and raising the pulse and spirits; and that these effects have been observed in both acute and chronic affections, in young and old, male and female.

In reply to the latter question, I should say that these useful, and in several cases most salutary effects have been obtained without any important drawback or deduction on account of indirect or incidental inconveniences. Thus, I have hitherto experienced no difficulty in keeping subjects of pulmonary disease under the constant operation of a narcotic, which repressed to a most important extent their mischievous cough, and secured them refreshing rest, without causing in the least degree anorexia or indigestion, or, with one or two doubtful exceptions, any inconvenient result or sensation whatever. Thus, again, I have repeatedly had a subject of articular rheumatism or severe bronchitis under the double influence at once of a diuretic-laxative medication and of an anodyne-antispasmodic; the saline solution, with or without colchicum, correcting the blood and secretions unimpeded by the narcotic, whose whole influence appeared to be expended on the tissues, seats of pain and irritation. For a third example I may refer to the use of the hemp in low fever, in securing the enjoyment of that great restorative in acute disease—viz. tranquil sleep; and producing this benefit without any neutralizing inconvenience, without causing constipation, nausea, or other effect or sign of indigestion, without headache or stupor.

The only class of cases in which I have found the hemp not to act as a competent substitute for opium, is in the intestinal fluxes, such as the diarrhœas of phthisis and of low fever in advanced stages, of old ulcerations of the bowels, &c., and in dysenteric affections. In such cases, opium is the great controlling remedy of the narcotic class, and admits of no deputy. And in such cases, happily, opium produces in judicious hands none of its inconvenient effects, and may usually be safely and freely employed.

Medico-Chirurgical Transactions, Vol. 26, *p.* 208.

[The following case of the same disease is given by Mr. Stapleton, of Trowbridge, and shows the effect of *Alcohol.*]

C. P., æt. 17, was wounded in the outer edge of the right hand; no tendinous, muscular, or nervous structures were involved. The wound was treated by water-dressing, and did well until the twelfth day, when the muscles of the jaw became tense, and the sternum and lower ribs were powerfully retracted by *tonic* spasm of the diaphragm, by which intense pain was produced. The opisthotonos was occasionally increased by violent clonic spasms of the same muscles. The wound was bathed in an offensive sanious discharge, and was extremely painful.

Opiates and antispasmodics were tried for twenty-six hours, the case meanwhile growing steadily worse. The patient lay immovably fixed, and could not open his mouth further than to allow a pill to be dropped in; every feature was indicative of extreme anxiety and suffering. He was perfectly sensible, and would answer questions, but always briefly, and begged to be let alone. Pulse 96, sharp and jerking; skin hot and dry.

As those remedies which experience and authority had sanctioned seemed utterly nugatory, and in the assurance of the speedy death of my patient if I could oppose no check to the progress of his frightful disease, it suddenly occurred to me to make the trial of producing profound intoxication. The most striking symptom in the pathology of this condition is, undoubtedly, the influence it possesses over the muscles of voluntary motion, and the excito-motory system generally. I conjectured, further, that by administering alcohol freely, it might, by entering the blood, *and independently of its intoxicating effect*, establish another condition of the nervous centres, *incompatible with the continuance of the tetanic spasm.* I had everything to hope and nothing to fear from its effects, if cautiously watched, and considering the hopeless condition of my patient. I could discover no record of the use of the remedy *so exhibited*, but therapeutics and analogy confirmed my suggestion, and directed me where experience and authority ceased to guide.

The effect of alcohol in calming the subsultus of typhus is unquestioned. I determined, therefore, to be limited in its exhibition only by the appearance of the condition I desired to produce, or by the occurrence of any injurious symptoms that could be fairly traced to its use.

Being provided with a mixture of alcohol and water, in equal parts, I gave him at once six ounces of such mixture, and four ounces more in a quarter of an hour; myself sitting by to note the result. In twenty-five minutes the patient (for the first time since the attack) lay on his side, in a profound and tranquil sleep, without any appearance of apoplectic stertor or other cerebral congestion. Every muscle was in a state of quiet relaxation, and the sense of pain had vanished as if by a charm. The tumultuous action of the heart had ceased; the pulse had sunk to 60, and was fuller in volume; the features had resumed their natural expression, and the whole surface of the body was drenched in a profuse perspiration.

For seventy-two hours he was kept under the influence of the remedy, complaining of no pain, and without any return of opisthotonos or clonic spasm, the bowels acting kindly and frequently, under the use of croton oil, and the opiates being abandoned.

On the 16th day the alcoholic influence was withdrawn, as a test of his real condition, and from fear of cerebral injury. With a return of consciousness, the tetanic symptoms returned, though in a much less degree, and as instantly and perfectly disappeared when the alcohol was again exhibited.

On the evening of the 17th day the back became again arched; the breathing hurried. He was at this time able to answer questions, and to move in his bed; the clonic spasms suddenly supervened, and he expired after their subsidence, without a struggle or a single evidence of pain, apparently from exhaustion.

On reviewing this case, I think I am justified in assuming that, in failure of the usual sedative treatment, much excruciating suffering was prevented by the use of alcohol; and that it might have prevented the accession of the disease, or, at least, *its establishment in the constitution*, had it been adopted at an earlier period. The unfortunate termination of the case I am inclined to attribute rather to fatal collapse than to the tetanic paroxysm. My only regret is, that the early and most valuable period was lost to treatment.

Lancet, March 22, 1845, *p.* 317.

[Mr. Potter, of Newcastle, thinks that the power of Indian hemp in spasmodic affections is not sufficiently appreciated; and publishes a case of traumatic tetanus, in which it was used, and seemed to possess great control over the tetanic spasms. The patient had received a severe laceration on the upper part of the right thigh, which exposed the femoral vessels. Every thing went on well till the twelfth day, when symptoms of tetanus appeared. A large dose of calomel and Dover's powder was then given, followed by ten grains of extract of Indian hemp, repeated every two or three hours. As his bowels were confined, two drops of croton oil were placed on the tongue, and an injection given, made with]

Tobacco leaves, one scruple; boiling water, eight ounces; macerate; strain for an enema. These produced free action of the bowels.

In consequence of the difficulty in swallowing, I determined to give the extract in the form of injection, and therefore ordered him to have the following enema every two hours:—Extract of Indian hemp, one scruple; strong beef tea, six ounces: mix. This was done, and the injections retained. No violent spasmodic actions took place, but the back became gradually more and more arched, so that it was necessary to place a pillow beneath. The extract did not cause any marked symptom of intoxication, though it evidently produced, at intervals, calm sleep.

Without suffering any pain, the disease gradually progressed, death taking place on the fourth day after symptoms appeared.

In this case, four drachms and two scruples of the extract were administered, and to the action of this medicine I attribute the freedom from pain and *clonic* spasm, which surely is sufficient to induce any one to give this remedy a full trial in so fearful a disease.

Lancet, Jan. 11*th*, 1845, *p.* 36.

[The following case of idiopathic tetanus is given by Dr. Newbigging:

The patient was a baker, who, while perspiring profusely, went out to chop wood, at a time of intense cold. In the evening of the same day, he complained of tetanic symptoms, which gradually increased.

Dr. N. saw him first a week after the attack. The pulse was natural; bowels constipated; urine scanty. He was bled to 12oz.; a drop of croton oil was administered; and a large blister was applied to the upper part of the spine. The bowels were opened by the oil, and he felt altogether relieved. Three days after, he was again bled to 14oz.; and a strong dose of morphia with 30 drops of tinct. cannabis ind. were given at bedtime. Three days after this, spasmodic action had commenced in the limbs; the dose of morphia was then increased, and ordered to be given four times in the day, and elaterium to be used as a purgative. Next day, croton oil was again had recourse to, the elaterium having proved ineffectual. Dr. Abercrombie, at the same time, recommended the use of arsenic, which was given with the morphia.

He continued to improve for a week, when he was suddenly seized with great dysphagia and tremors, which were soon removed by placing him in the erect position. His medicines having been discontinued for two or three days, were renewed. About five weeks after the commencement of the attack, he expectorated a quantity of pus mixed with mucus, which expectoration continued three weeks. He had afterwards thickening of the spinous processes of the cervical vertebræ, and was attacked with anasarca, which was subdued by diuretics, actively administered, and in about three months he was able to return to business.]

The principal features of interest in this case of what is considered a rare disease in this country, are, the gradual affection of the different muscles of the body, commencing with those of the jaw, and the successful issue of the treatment, which, however varied, may be considered to have resulted from the persevering employment of croton oil and opium; for although arsenic, Indian hemp, colchicum, &c., were administered to him at different periods, I believe, to none of these was so much benefit attributed by us—and he was occasionally visited by Dr. Abercrombie, Sir George Ballingall, my father, and Dr. Duncan—as from the exhibition of opium in full doses, with the occasional use of croton oil; for, whether we consider this medicine to be endowed with any specific effect or not, as reasoning from somewhat analogous cases of nervous affections I feel disposed to do, it certainly seemed to be followed by greater relief to the tetanic symptoms than when an ordinary purgative, such as scammony, gamboge, &c., was exhibited. I have occasionally observed benefit from the Indian hemp in allaying irritation and causing sleep, particularly when opium was contra-indicated; but I am somewhat doubtful of the value of this remedy in tetanus, and am disposed to think, that no case where opium is so decidedly indicated can be benefited by the administration of hemp, if the former powerful remedy has failed to be of service.

[It seems probable that in this case some degree of inflammation at the upper part of the spine produced the complaint, followed by formation of matter which subsequently became connected with the organs of respiration.]

Northern Journal of Medicine, March, 1845, *p.* 257.

[A case of traumatic tetanus, which was cured by the use of emetics, is published by M. Allut. The patient was treated first by opium and musk, turpentine liniment along the spine, and leeches to the neck, but hourly grew worse. It occurred to M. Allut that he had seen the use of emetics proposed, and in despair, he administered a strong dose. On returning four hours after, he found his patient decidedly better, and the urine, which had been suppressed for 24 hours, had returned. The treatment was continued for eight days, without any vomiting being produced, or more than one stool per diem, and the man made a rapid and perfect recovery.]

Encyclographie des Sciences Médicales, Dec. 1844, *p.* 48.
(Quoted from Journal de Chirurgie de M. Malgaigne.)

6.—*Cholera treated by Tartar Emetic.*—[Mr. Gay, in his report of cases which occurred in the Royal Free Hospital, mentions an interesting one of cholera from fright, which was successfully treated by the potassio-tartrate of antimony. The patient was a girl nine years old.]

She was labouring under severe cholera, with inability to articulate, and extreme difficulty of swallowing anything, but more especially liquids. She was thin, and her pulse quick and feeble. Her attack was attributed to the circumstance of being frightened by a mouse about three weeks before she was brought to the hospital. She screamed for several minutes at the time, and afterwards became "strangely altered," (as her friends expressed it,) and extremely restless. She was directed to take of sulphate of iron, one grain; extract of henbane, three grains, in the form of a pill, three times a-day; valerian, camphor, assafœtida, counter irritation along the course of the spine, shower-baths, &c. were tried, but the spasmodic action of the limbs increased, and became so distressing that it was deemed desirable to give morphine, with the view of procuring a continued state of narcotism. This was, however, unavailing, and on the 20th of September, Mr. Gay directed her to take nauseating doses of the potassio-tartrate of antimony. She commenced taking the wine of that preparation, ʒj. three times a-day.

24th.—The medicine does not produce nausea, but her symptoms are not worse; bowels not open; the antimonial wine to be increased to ʒiss. three times a-day—blue pill, one grain; rhubarb pill, two grains, in the form of a pill every night.

27th.—Was nauseated by the first two doses of the wine, but not afterwards. She is considerably less agitated, and has for a few seconds control over her movements. Continue medicine, ʒij three times a-day, and pills at night.

Oct. 4th.—She vomited and became faint after the first ʒij dose, but not after the subsequent doses. Her symptoms are much less severe, and she now begins to talk.

Oct. 18th.—After last report, she took ʒiiss of the antimonial three times a-day, and to-day she is steady, and possesses as much control over her movements as she ever had.

25th.—She discontinued her medicine after the date of the last report, and remains perfectly recovered.

Lancet, Dec. 7, 1844, *p.* 328.

7.—INFLUENCE OF THE SYMPATHETIC NERVE IN VARIOUS DISEASES.

By T. Procter, M.D.

[Dr. Procter concludes from the intimate anatomical relation between the sympathetic nerve and the arterial system, that its office consists in regulating the contractility of the blood-vessels.]

Nerves derived from other sources frequently accompany arteries for a long portion of their course, never, however, transmitting branches large or small to them, so that their juxta-position must be referred to some other cause than for affording facility for influencing their movements. The sympathetic, on the contrary, is emphatically the nerve of these vessels, enmeshing and penetrating them on every side, and following their minutest ramifications to their ultimate distribution. After describing the anatomical relations of the nerve, Dr. Procter thus proceeds:—

"The nearest approach to a positive determination of its use that we can come to with our present limited knowledge is, that it is for the purpose of regulating the tonic contraction of the arterial system, and for *nothing else;* however, it is difficult to expound or afford the requisite proofs of this opinion, nor am I aware that public attention has at all been called to it. I venture, therefore, allowing this idea to form the basis of my investigation, to proceed to explain my present views upon the subject, first calling the reader's attention to the remarkable fact with which the discoveries of Sir C. Bell have made us acquainted—that there is not a part of the human body that is not supplied with two or three sets of nerves according to the simplicity or the intricacy of its functions; the excitors for sensibility, the motors for movement, and the respiratory system for the complicated purposes of respiration. When we see, by the discoveries of Dr. M. Hall, that we have a presiding and regulating power over all the sphincters and muscles of the body through the medulla oblongata and the medulla spinalis, and, in fact, that there is scarcely an organ in the human body that is not now *known to have* a moving and directing power; is it then probable, or even possible, that so important a system as the arterial should be without such a controlling and directing power? Acknowledging that it is not, as every one must necessarily do, and coupling this with the fact that there is a large and evidently important system of nerves exclusively surrounding, embracing, and running into the coats of the arterial system, of which we know little or nothing; and when we see the remarkable way in which anatomy bears out this opinion, I would venture to predict that so surely as anatomy led Sir C. Bell on step by step to his admirable, lucid, and conclusive arrangement of the other nervous systems, so surely does anatomy point out to us most distinctly the functions of *this* nervous system; and doubtless the time will arrive when it will be capable of demonstration, difficult as I confess it now appears to be, from its peculiar situation in the body, and from its apparent total want of functional connection with the other systems. It is singular that up to this period no author has sufficiently pointed out the remarkable difference in appearance and structure between the ganglia of the sympathetic and those of the spinal nerves. A single glance will be sufficient to show this very marked difference. It is seen in the sympathetic ganglion that the nerves appear to be more like elongations of the ganglion, each coming out clear and distinct, like so many tails, the ganglion itself being of an oblong shape and smooth. In the spinal ganglia the nerves are seen entering the globe-like body of a ganglion in bundles, leaving it in the same divided or fascicular form."

After alluding to the proofs derived from the experiments of Philip, Flourens, and others, of the non-dependence of the circulation upon the cerebro-spinal system, Dr. P., in another part of his work, thus expresses himself:

"It is self-evident, then, that it is to the sympathetic (and that alone) that we must look for regulating the arterial system. And it will be observed that in all parts of the animal body where large and sudden supplies of blood are required, such as the heart, stomach, bowels, and organs of generation, we have the ganglionic or sympathetic system very fully developed, and, as far as I can judge, in ratio to the amount of blood supplied to the several organs: on the contrary, in some parts of the body, and in the extremities where the flow of blood is more regular and not subjected to those *sudden calls for large supplies of blood at irregular periods*, we find this nerve manifestly decreasing in size: and, indeed, as far as we can judge with the naked eye, ceasing altogether in some parts. Still I perfectly agree with Sir Charles Bell that it is distributed all over the body: but whether its influence is confined to regulating the small arteries which supply the coats of the vessels, or whether the same influence is continued by it over the whole circulating medium of the extremities and other parts that it manifestly has over the abdominal viscera, must, I fear, be left to a more enlarged enquiry."

"If debility of its fine threads be a sufficient cause to throw into dissonant action the heart and arteries in some cases, should we not be inclined to abandon the practice which rests on depletion, counter-irritation, and treatment of this kind, and substitute in their place remedies and a regimen which may fortify and soothe the nerve ? If dropsy be often caused by obstruction in the flow of blood through the portal system, and this debility of action in the portal veins depends upon an exhausted state of the sympathetic, shall we torment the patient, and perhaps increase the debility in question, by the use of hydragogues and diuretic medicine, which can only be intended to act on the *effect* of the original malady, leaving the *cause* unacted upon (at least beneficially so); or, finally, knowing the inevitable tendency of the disorder of this nerve to engender serious organic maladies, shall we not watch for the first symptoms of its decline to restore its tone, or at all events retard the period of its loss of energy ? But it will be asked, where are the means of restoring to a nerve the power it has lost ? It may be replied, that although the restoration of a function utterly lost by time or long stimulation may be impossible, yet there is abundant evidence to show that other nerves have their functions restored in a direct mode by medicine. Take, for example, the agency of strychnine on paralysis of the spinal nerves, of carbonate of iron on neuralgia, and what evidence have we that all the beneficial effects of stimulants and tonics are not through the influence of this nerve?

"Nor can any one be ignorant that a regimen in which irregularity and rest from mental emotions or extortions are insisted upon, has produced still more remarkable restorations. I do not doubt that many with myself will think that by similar means the impeded functions of the sympathetic have been restored.

"A very curious fact confirmatory of the views which I have taken upon this subject, is, I think, afforded by the remarkable analogy which will be seen to exist between the action of strychnia and of electric or galvanic influence upon functional disorders in some of the organs over which the sympathetic, and *that alone*, has control; not only as regards the kind of power acting upon the nerves, but also its influence on this particular system of nerves."

Medico-Chirurgical Review, Jan. 1845, *p.* 112.

8.—*On the Therapeutical Uses of the Electric Current.* By M. Matteucci. [This is an agent which has hitherto been prescribed empirically, and chiefly as a last resource, when other remedies have failed. M. Matteucci, from his researches, is induced to think that paralysis and tetanus are the diseases in which it is most likely to prove beneficial.]

In the application of electricity to the treatment of paralysis and tetanus, it is necessary to bear in mind two electro-physiological facts. The *first* is, that an electric current, if transmitted through a nerve, for a certain period of time, destroys the sensibility of the nerve, or, in other words, paralyses it. If allowed to remain in repose, the nerve, after a certain interval, recovers its excitability. But it has been ascertained by Matteucci that the excitability may be restored in a much shorter period by passing a second current through the nerve in the reverse direction. The *second* fact to be borne in mind is, that if the nerves of a living animal be submitted to the passage of the electric current, renewed at short intervals, tetanic contractions are excited; and if the experiment be continued for some time the nerves entirely lose their excitability.

"These are the facts," says Matteucci, "which, independently of all theory or hypothesis, should guide us in the therapeutical application of the electrical current to palsies. We may, in fact, admit that in some cases of paralysis, the nerves of the affected limb are in a condition similar to that produced by the continued passage of an electric current. We have seen that, to restore the excitability to a nerve which had been deprived of it by an electric current, it is requisite to conduct the current in the opposite direction. Hence to cure the paralysis, the current should be passed in a contrary direction to that which has produced it. In a paralysis of motion the inverse current should be employed; while, on the contrary, in a paralysis of sensation, the direct current should be used. In a case of complete paralysis [that is of both motion and sensation] there is no reason to induce us to prefer the one current to the other.

"Theory also teaches us a rule in its application: never to continue the passage of the current too long, lest we augment the disease we wish to cure. The more intense the current the shorter should be its duration; and as we have seen that the passage of the electric current in the nerves, repeated at short intervals of time, considerably enfeebles their sensibility, when continued for a long time, we must take care and not pass from one extreme to another. Theory advises us to apply the electric current of an intensity which should vary with the degree of the malady, and continue its passage for two or three minutes, at intervals of some seconds. After these two or three minutes, during which we shall have communicated from twenty to thirty shocks, we should leave the patient at rest for some time, and then renew the treatment.

Medico-Chirurgical Review, April 1845, *p.* 320.

9.—*Treatment of Neuralgia by Tobacco.* By Mr. JOHN CHIPPENDALE, London. [In a former part of the Lancet from which we take the following extract, Mr. Chippendale suggests the use of tobacco in neuralgia; since then he has tried it successfully in two cases. Finding the infusion an inconvenient form for frictions, he ordered an extract to be made as follows:]

Take of the best shag tobacco, four ounces; distilled water, two pints; boil, and let them simmer for two or three hours, and strain; then wash the tobacco in two pints more of boiling distilled water, strain, and add it to the former liquor, and evaporate it to an extract. This operation was intrusted to the hands of Messrs. Baron and Harvey, the manufacturing druggists of Giltspur-street, and produced about an ounce and a half of the extract, possessing this very great advantage, as far as might regard private practice, that it was free from the disgusting smell belonging to tobacco. One part of this extract was now mixed with seven parts of simple cerate, to form an ointment, which, for private practice, might be rendered more elegant, as the pharmacopalists say, by the addition of a little neroly, which I choose, as being as little stimulating as any essential oil of which I have any knowledge. Here, then, we have a narcotic ointment; for if the stimulating properties of the tobacco reside in the oil, it is to be presumed that has been all expelled in the manipulation. This ointment has been used for inunctions, in the quantity of half a drachm in some cases of neuralgia, night and morning, in others at night only, and has been attended with perfect success. The apothecary at the Farringdon Dispensary being applied to by a man with a bad toothache, advised the extraction of a tooth, but the patient not consenting to this, had some of this unguentum nicotianæ given to him for frictions, as a placebo, I believe, but it cured his toothache. I have also tried it as a local application, in psoriasis, with good effect; but on this it is not now my object to dwell.

[It seems strange that Mr. Chippendale should have met with such success, considering that the same remedy failed in Dr. Allnatt's hands. Can it have been that the preparations of the herb used by the latter were of a stimulating character, whilst Mr. C's. was a narcotic?

It is always pleasant to be able to reconcile theory with fact, nothing being less satisfactory than empirical practice. Mr. Chippendale would account for the action of his strong preparation of tobacco thus:—tobacco, it is notorious, deadens sensation;—the agent is applied, so to speak, to a nerve itself: the first effect must be to deaden sensation in this nerve. The nerve is supplied with smaller nerves, nervi nervorum, or nervi vasorum, which are instrumental in the nutrition of that nerve; when these are dulled, their functions become diminished, whereby the nerve becomes atrophied, and the pain which was produced by pressure ceases. True, the process of nutrition may be again set up, and the neuralgia reinduced, but it is probable, that, by proper perseverance in the first instance, permanent atrophy might be produced.]

Lancet, March 1, 1845, *p.* 238.

10.—TREATMENT OF DELIRIUM TREMENS.

By Dr. Morehead.

[Dr. Blake and Dr. Hare, of Boston, both believe that this disease runs a certain course, and requires a given time to subside, to which conclusion Dr. Morehead had himself arrived, unaware that previous observers had entertained the same opinion. The reasons which guided Dr. M. to this opinion were, 1st, that a dose of opium that failed one day in procuring sleep succeeded the next, which is to be explained either on the supposition that the natural tendency of the symptoms was to abate, after a certain course, or that the power of opium is cumulative; our experience of its use in other diseases is however against this ; and, 2ndly, that in cases treated with full opiates frequently repeated, sleep has been produced for three or four hours, after which the patient has awoke delirious as before.

Dr. M. thinks that sufficient attention, in relation to treatment, has not been paid to this tendency in the second stage to run a certain course, and remarks that]

If acknowledged, it may be safely affirmed, that the indication of cure is not by full doses of narcotics, to force a state of sleep, but to conduct the patient through the period of delirium, by withdrawing all sources of irritation, by moderating or sustaining the circulation, and by calming the nervous excitement.

[A similar opinion to this is expressed by Dr. Blake. As to its treatment, Dr. M. says—]

The indications of cure, as thus stated, are, I think, best effected by means of the cold affusion, and the use of tartar emetic, combined with opium, or some other narcotic, and the exhibition of stimulants.

In regard to the *cold affusion*, it may be used with excellent effect three or four times in the course of the 24 hours, the most important, however, being that before bed time, in all cases in which the circulation is steady, the skin not covered with perspiration, or its temperature not reduced below the natural standard, or in which there are not present any of the local complications which contra-indicate the use of this remedy under ordinary circumstances. In cases in which, from the state of the pulse, there may be doubt of the propriety of the cold affusion, it frequently becomes quite admissible by preceding its use by the exhibition of a stimulant (as brandy, &c.); and in the still more doubtful cases, and even in instances in which the measure may be decidedly contra-indicated, there is a good effect from using cold affusion to the head, and at the same time a hot foot bath.

There is not, according to my experience, much difficulty in inducing patients to submit to this remedy; and it is hardly necessary to add, that the employment of coercive measures to effect it, is altogether inadmissible. In considering this statement, however, it must be borne in mind, that I write of experience in a climate whose mean temperature is about 80°, and that the water used has never been artificially cooled; and that the practice of frequent bathing is habitual to many of the patients. The first consideration is important, as bearing on the question of the temperature of the water used; and the second, as in all probability explaining the little difficulty which has been experienced in inducing patients to submit.

But the exhibition of *tartar emetic, with opium or other narcotic*, first, I believe, introduced into practice by Dr. Law, of Dublin, and followed by Dr. Graves, Dr. Clendinning, and others, constitutes the most successful means of controlling the symptoms of this stage of the disease. This mode of treatment has, during the last five years, been much followed in the cure of delirium tremens, in the European General Hospital at Bombay; and there has been also, during the same period, ample opportunity of comparing the result, with that of the mode of treatment by free opiates frequently repeated.

Tartar emetic and opium, in proportions modified according to the symptoms, and associated with the use of the cold affusion and stimulants, is, in my judgment, a much more successful and satisfactory mode of treating the second stage of delirium tremens, than the more common plan of giving free opiates uncombined, or in combination with stimulants alone, and is moreover devoid of the risk of positive injury which more or less attends the latter system of treatment.

The tartar emetic has been given by me in doses from half a grain to a grain in an ounce and a half of camphor mixture, with from twenty to thirty minims of tincture of opium or tincture of hyosciamus, repeated every hour, second or third hour. The variations in the dose, and the intervals at which given, being dependent on the state of the circulation, the condition of the skin; and the degree of mental excitement. Though in determining these variations, there is room for the exercise of the discretion in each particular case, still, it will probably be found, that the greater number of cases are sufficiently controlled by three-fourths of a grain of tartar emetic, and thirty minims of tincture of opium or tincture of hyosciamus every second hour, continued till sleep is induced,—with intermissions of several hours, at times, if the sinking of the pulse, or reduction of the temperature of the skin, should indicate the expediency of such a measure. The tincture of opium is, I think, the more useful; the tincture of hyosciamus having been used in the milder cases, and chiefly with the view of avoiding the constipating effect of the former. The tartar emetic, even in grain doses, thus combined and repeated every hour, very seldom causes nausea or vomiting; in fact, it has seemed to me, that in the second stage of delirium tremens, there is as complete a tolerance of the emetic action of the tartar emetic as is present in pneumonia; and this I have remarked, even in cases in which there had been irritability of stomach during the first stage,—an observation which also accorded with Dr. Law's experience.

In cases treated in this manner for about twenty-four hours, without tendency to sleep appearing, it is often very useful to intermit this medicine for a few hours before bed time; then to use the cold affusion, preceded, if the pulse and skin indicate the expediency, by a stimulant, and after the affusion, to give one dose of the antimonial, with a drachm or a drachm and a half of the tincture of opium. By this means, sleep is often induced in cases in which, without this fuller opiate, it might have been postponed for several hours. It is, however, I think, very generally of no avail to adopt this course within the first twenty-four hours of the second stage,

Stimulants, as wine, brandy, &c., are more or less required throughout the treatment of this stage of the disease; and their use it perfectly compatible with that of the cold affusion and the exhibition of the tartar emetic and opium. The degree to which these stimulants are required in individual cases, must vary according to what may be known of the previous history of the patient, the state of the pulse and skin at different periods; and this latter symptom ought to be the principal guide.

Dublin Journal of Medical Science, March 1845, *p*. 160.
(*From the Transactions of the Medical and Philosophical Society of Bombay*.)

11.—ON BLOOD LETTING.

By Benjamin Travers, Esq., F.R.S., &c.

The choice of measures, *i. e.*, local or general blood-letting, is determined, partly by the relation of the parts affected to the centre of the circulation, and in part by the more or less urgent necessity that exists for disembarrassing the general functions, and arresting destructive inflammation. In visceral inflammation, venesection is indicated to the utmost extent that the powers of life will bear; for here the mass of blood is so altered and spoiled for its proper and healthy purposes, by the direct implication of the blood-making and blood-preparing organs in the disease, that relieving the system of its presence to the extent that can be borne, is the main resource we possess for its preservation. As we would remove a poison, a *materies morbi*, in such cases we take away blood. Its altered condition is palpable when eliminated from the body; it undergoes a peculiar separation of its parts, and presents other appearances not manifested by healthy blood. The difference of the blood within the vessels from that of health, is not less, if we could fully appreciate it. If inflamed blood be transferred into the vessels of a healthy animal of the same species, as his own is withdrawn, instead of supporting, it rapidly destroys life. A freer circulation through the smaller vessels, and those of the excretory glands especially, ensues almost immediately upon a full blood-letting: the sense of overwhelming oppression is relieved, and the inflammation, if not abridged by its effects, is disposed to a kindlier termination.

There are two false doctrines concerning blood-letting for inflammation, which cannot be too strongly condemned: the first, anticipatory blood-letting, by which I mean, the large and repeated detraction of blood before inflammation, being considered inevitable, has actually manifested itself—on the hypothesis of starving the action, and thus rendering it tractable—which is a direct attack on the vitality, and fatally prevents the action, if it do not destroy the resisting powers of the system. The second, continuing the employment of the lancet so long as the last drawn blood exhibits the signs of inflammation, which if drained to the last drop it would do; or, in other words, not reflecting that there is a line beyond which the practice becomes destructive instead of remedial; and that there are many inflammations which do not admit of arrest by depletion, and upon which other modes of treatment are efficient to this end, even though not an ounce of blood be drawn. Many lives have been sacrificed to the prevalence of these irrational and absurd notions, and many preserved in their extremity by being fortunately placed beyond the reach of the surgeon; especially, I am induced to believe, in military practice.

Medico-Chirurgical Review, Jan., 1845, *p.* 95

[On this subject, Dr. Dunglison says:]

It may be laid down, perhaps, as a general law, that when blood is lost to a considerable amount, the great nervous centres receiving an inadequate—and the rest of the nervous system an irregular supply, their excitability becomes largely and irregularly developed, so that, under this impressible condition of the nerves, the blood-vessels, whose functions are carried on under their presidency, assume augmented action; and if, owing to the previous existence of hyperæmia in any organ, the nerves, proceeding to that organ, are in a morbidly excitable condition, a fresh development of excitability may ensue after the bleeding, and the hyperæmic condition, instead of being relieved by the loss of blood, may be augmented by it. In individuals whose nervous system is very impressible, the same effects may be induced by a full bleeding, as have been described to result from excessive discharges from the uterus, and, accordingly, where hyperæmic conditions occur in such individuals, the practitioner is cautious in the use of the lancet, and if he employs it, he does not carry the depletion so far as to depress too much the powers of the system,—aware, that if he should do so, under the nervous irritability or neuropathia which he develops, re-action might succeed to such an extent as to reproduce the exhaltation of organic actions in the part, and perhaps to a greater degree than before the operation. It is in such impressible habits that advantage is found in the adoption of other sedative agents; and that a combination of blood-letting, short of inducing syncope, with a full sedative dose of opium, is often so serviceable; —the bleeding diminishing the exaltation of the vital manifestations, by acting on the nerves through the blood-vessels; and the opium preventing the subsequent development of nervous excitability. In strong individuals, the same plan, pushed to a still greater extent, is equally successful, and not less philosophical, when employed for the removal of internal inflammations. It is the plan which, as before observed, is adopted with so much success, in acute peritonitis;—the bleeding being carried so far as to make a decided impression on the system, and the opium administered in a full dose; a sedative influence is thus exerted on the body generally, and on the inflamed tissue in particular, under which the hyperæmia is effectually subdued.

Medico-Chirurgical Review, Jan., 1845, *p.* 86.

12.—ON A CERTAIN FUNCTIONAL DISORDER OF THE HEART.

By Robert Christison, M.D., F.R.S., &c., &c.

[Dr. Christison states that there is a certain functional disorder of the heart which is liable to be mistaken for hypertrophy, and which is not alluded to by previous authors on the subject. The cases of this description are chiefly to be met with during adolescence, and in young adults.]

The first I have to mention, is the case of a student of this University, who consulted me in the spring of 1835. He was eighteen years of age, slender, yet muscular, of middle stature, florid in complexion, and healthy-looking. He complained of a sense of great pulsation in the chest, always forcing itself on his attention more or less, but particularly after meals, and above all, when he lay down at night. The beating in the left side was then extremely troublesome; and being attended also with throbbing in the head, it often prevented him from falling asleep for several hours. The pulsation in the chest was aggravated by slight mental excitement, confinement to the house, hard study, or any violent exertion, but not by moderate exercise; and he always felt better when he had regular active exercise in the country. There was no difficulty of breathing, except when the palpitation was suddenly rendered for a time unusually vehement; and he had no dyspeptic symptoms of any consequence. I do not know how long he had been thus affected; but his complaints had been particularly troublesome for about a twelvemonth.

The pulse was about ninety, moderately firm, regular, and easily excitable. The chest was rather narrow, but otherwise naturally formed. The left side of the chest, over the heart, to the extent of one's palm, was visibly raised at each pulsation; and my head was lifted by the stethoscope while I examined this region. The apex pulsated with great force between the cartilages of the fourth and fifth ribs, very near the sternum. The pulsation was unattended with anything unusual in the sounds of the heart, except increased loudness and sharpness. The sound towards the outer extremities of the subclavian arteries was scarcely greater than natural. The dulness of sound upon percussion over the heart was unusually limited in extent.

In this instance the heaving impulse communicated both to the ear and the hand was so excessive, that I was at first in doubt as to its true nature. But trusting to the position of the heart's apex, the signs furnished by auscultation, and the effects of exercise, I came to the conclusion, that there was no serious organic disease of the heart; of which the patient had entertained great dread.

He was therefore advised to return home to the country as soon as possible, to suspend his studies for a time, to take frequent, regular, but never violent exercise in the open air, and to live chiefly on milk and farinaceous diet, with as little animal food as possible. He was particularly warned of the necessity of weaning himself from the habit of attending to the action of the heart,—a habit into which all such patients inevitably fall, but which as inevitably aggravates, not merely the sense, but likewise the actual force, of pulsation. This is always found by the patient the most difficult article of regimen to follow. But if he prevail on himself to regard the beating in the chest and head as a functional affection merely, as the source of annoyance and suffering, but not of danger,—if he be attentive to resume exercise whenever it happens to be troublesome during the day, and to betake himself to the reading of unexciting literary work when it forces itself too much on his notice on his going to bed, he will ere long succeed in losing sight, as it were, of the sensation altogether. At least such has been the result in all the instances of this affection which have come under my observation.

So was it in the present case. When the youth returned to his studies at the University next winter, he informed me, that in a few weeks he ceased to experience any sense of pulsation either in the chest or head, except during unusual mental excitement, or some violent bodily exertion; that he was able to take brisk exercise without inconvenience; that he slept with little disturbance; and that his former complaints no longer interrupted his studies. I was surprised, however, to remark,—for this was the first case of the kind I had an opportunity of examining a second time after a considerable interval,—that the heaving of the chest and strong impulse still continued, and with no great abatement in force. The pulse also continued frequent, yet regular. I saw him again after an interval of six months, still in the same state. His studies had not affected him permanently; but he had several times found reason to be satisfied, that, without a firm determination not to keep watch upon the action of his heart, he would relapse into his former condition. He afterwards became actively occupied in Roxburghshire, and I heard of him several times as enjoying good health, but still presenting strong impulse of the heart and heaving of the chest. Subsequently, he went to India, where he has been for nearly four years. A medical friend, acquainted with his case, who heard from him two years ago, informs me that he was then in the enjoyment of perfect health, and that his family continue to receive the same favourable reports of him.

The next case is the most interesting of all that I have yet had occasion to observe. A graduate of this University, twenty-five years of age, had suffered, so far as I remember, for several years from palpitation and dyspnœa, which had been particularly severe for a twelvemonth. When I first saw him, towards the end of February, 1841, he complained of incessant violent pulsation in the chest, accompanied with shortness of breath, and also of constant beating in the head, with a sense of fulness and distention there, injection of the eyes, headach, giddiness, and ringing in the ears. These symptoms were aggravated after meals, by mental labour or disturbance, by sudden exertion, and above all on his going to bed, where he was often for hours unable to lie down, owing partly to the alarming feeling of the heart pulsating forcibly against the parietes of the chest, and partly to the beating of the temporal arteries, which seemed to him to raise his head from the pillow. In the day-time he was unable to follow any occupation, and got no relief except from gentle exercise on foot or horseback. During the night he slept little, sometimes not at all, even when large opiates were taken. His mind was constantly occupied with his complaint; his appearance was excited, anxious, and hypochondriacal; he was strongly persuaded of his malady being an irremediable organic disease of the heart; and he entertained a dread of its terminating in sudden death.

He had consulted, he said, various medical men in town and country, most of whom pronounced him to labour under hypertrophy of the heart. One or two, as he stated, had said they thought his disease functional only; but as they could not satisfy him how a mere functional disorder could occasion such severe and steady symptoms, he thought they were charitably deceiving him. One physician, a friend in the country where he resided, had convinced him recently before, that the primary disease was an affection of the brain; and he had been accordingly treated by general blood-letting, shaving, blistering, leeches, cold applications, and brisk purgatives,—under which method he thought himself decidedly worse.

He was of middle stature, moderately muscular, and florid. The pulse was about 100, full and firm, the tongue doughy and rather loaded, but his digestion good. The carotids and temporal arteries beat with considerable force; and the head, which he continued to keep shaved, was generally hot. The cardiac region of the chest was so strongly elevated by the heart's action, that the movement could be seen across a small room, when he was stripped. The impulse imparted to the ear and hand was as great as I have ever felt it in any case of genuine hypertrophy. The apex beat distinctly between the cartilages of the fourth and fifth ribs, very near the sternum. The præcordial dulness on percussion was unusually limited in extent. Nothing unnatural could be detected in the sounds of the heart's action, except great loudness, uncommon sharpness, and general diffusion, so that they could be distinctly heard at any part of either side of the chest.

[Dr. Christison relates several other interesting cases of a similar description. Many of the symptoms may, no doubt, frequently accompany functional diseases of the heart.]

One peculiarity, however,—which at least is not generally observed in functional affections,—is the constancy of the leading symptom, violent pulsation in the præcordial region. The patient may have his attention withdrawn from it for a time, or even permanently, as in the cases I have witnessed. But whether he be conscious of pulsation or not, a preternatural heaving impulse may at all times be both felt and seen in the left side of the chest. The force of the impulse varies, it is true; but it always greatly exceeds what is natural, even when the other symptoms, more especially the patient's own sensations, have undergone such improvement, as to make him consider his disease at an end.

Another peculiarity is the region where the pulsation presents itself. The apex of the heart may be felt with the hand pulsating, —not as usual, under the left nipple, between the fifth and sixth ribs,—but directly under their costal cartilages, very near the sternum, and generally between the fourth and fifth ribs. This is one of the principal characters by which the cases now under consideration may at once be distinguished from unequivocal hypertrophy, with enlargement of the heart; for in that disease the apex commonly pulsates much farther from the sternum, and lower down than in the space between the fifth and sixth ribs.

On examining the chest by percussion and the stethoscope, it is observed that the dulness on percussion in the region of the heart is not so extensive, and, in particular, does not reach so low down as usual; and with the stethoscope nothing can be marked but powerful impulse, with unusual strength, sharpness, and diffusion of the sounds of the heart's action. There is no sound indicative of structural change in the valves, and no irregularity in loudness or interval. Farther, there is no upheaving impulse behind the upper end of the sternum, no pulsation in the jugular veins, and either no unusual sound and impulse in the subclavian arteries, or at all events an increase by no means in proportion to the augmented impulse of the heart.

I have had, in several instances, an opportunity of examining the progress of this affection at different periods during an interval of several years; and invariably the result has been, that, while the patient's complaints have undergone material mitigation, on the other hand, what are usually called the *physical signs* underwent scarcely any change. The strong impulse, the heaving of the chest, the position of the heart's apex, and the extent of dulness of sound on percussion, remained very much as at first. The force and loudness of the heart's impulse were indeed somewhat diminished. But the diminution was not in any instance considerable, and always much less in proportion than the improvement in the general symptoms. For as to these symptoms, in every case which I was disposed from the first to consider of the present denomination, they either eventually disappeared altogether, or became so mitigated as to be no longer the occasion of annoyance to the patient.

The pathology of this affection is obscure; but the facts which have been already stated, more especially those relative to the position of the apex of the heart, the extent of dulness on percussion over the heart, and the absence of the preternatural sounds which indicate valvular disease, seem to supply a plausible explanation of its characters. It appears to me that all the symptoms, both in their nature and their progress, may be accounted for on the supposition that the heart is somewhat displaced, so that its apex lies unusually close to the parietes of the chest, and that it is also probably disproportionately small in size. It cannot be denied, indeed, that concentric hypertrophy, with displacement, may also account for most of the symptoms. But if hypertrophy be present, it does not seem to increase with time, so far as I have hitherto been able to remark. And the symptoms may be very well explained without it. The small size of the heart leads to unusual increase in the force and frequency of its contractions under ordinary sources of excitement; and if on any occasion of the kind the patient's attention be drawn to the pulsation within the chest, and the violent impulse over the region of the heart, there is only required an excitable constitution, and the habit of watching the symptoms, added to the popular dread of diseases of the heart, in order to engender gradually all the complaints which have been described above.

The general principles of the treatment are obvious, from this view of the pathology of the affection, and the details of some of the cases.

Lond. and Edin. Monthly Journal of Med. Science, Jan., 1845, *p*. 82.

13.—TREATMENT OF ASPHYXIA.

By J. E. **Erichsen**, Esq , Lecturer on General Anatomy and Physiology at the Westminster Hospital.

[Mr. Erichsen and Dr. Sharpey were appointed by the General Committee of the British Association, in 1842, to investigate the subject of asphyxia. Mr. Erichsen, assisted in many of his experiments by the valuable guidance and co-operation of Dr. Sharpey, has made an interesting report on the subject, in which he points out the cause of the cessation of the circulation, and the best mode of treatment. He examines in detail the principal doctrines which have been entertained on the subject, which may be arranged under the following heads:]*

1st. That the circulation ceases in consequence of the arrest of the respiratory movements.

2d. In consequence of want of power in the heart.

3d. In consequence of an obstruction in the passage of the blood through the capillaries of the lungs.

[Our object, however, will be obtained if we point out the principal circumstances to be attended to in the treatment of these cases. Mr. Erichsen, in this part of his subject, chiefly discusses the treatment which is adopted by the Royal Humane Society, and recommends some important modifications. Before proceeding, we may state that Mr. Erichsen in his elaborate essay shows]

That one of the chief causes of the arrest of the circulation in this disease is the obstacle offered to the passage of the blood through the lungs consequent upon the cessation of its arterialization and the arrest of the respiratory movements, and that the contractions of the heart cease, and the functions of the brain and nervous centres become suspended, in consequence of the circulation of unoxygenized blood, deficient in stimulating and nutritious properties, through their tissues. Our first object should therefore be to arterialize the blood, and our second to restore or maintain the action of the heart, and thus cause the freshly aerated blood to circulate through the nervous centres, on which it acts as the most powerful stimulant, re-exciting the functions of the *medulla oblongata* and the nerves of respiration, and thus enabling the respiratory movements to be properly maintained, and consequently the oxygenation of the blood to be naturally performed.

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* They who wish to pursue the history of this subject, will find very interesting information in Dr. Kay's Treatise on Asphyxia, and in the Article by Dr. Carpenter in the third volume of the Library of Practical Medicine.

Such being the principal indications to be accomplished in the treatment of asphyxia generally, we will now proceed, says Mr. E., to the consideration of the most efficient mode of carrying them out in those cases of suspended animation that proceed from drowning, which, as being the most frequent, are the most important to be properly understood.

As it is not necessary in every stage of asphyxia to have recourse to the same plan of treatment, I think that it will tend to place this subject in a clearer light if we divide the cases of this disease into the two following classes:—

1st. Those in which the action of the heart is still continuing, however, feebly.

2d. Those in which the action of the heart has ceased.

[It would be advantageous if the average time at which the heart ceases to beat could be ascertained with accuracy: but from various circumstances this is found to be exceedingly difficult: and the discrepancies in different statements may arise from *syncope* and *asphyxia* being confounded together. In syncope the primary impression is upon the nervous system, the heart continuing to pulsate feebly, and the blood consuming the remains of oxygen left in the lungs: the cerebrum in fact being suspended in its functions, and animal life extinct, but organic existence being prolonged. In asphyxia, on the other hand, the primary disorder is in the respiratory and circulating systems, the brain and *medulla oblongata* being only secondarily affected. The blood rapidly becomes venous and no longer stimulates the heart. These two causes will therefore require very different modes of treatment. "In the one case we should endeavour to re-oxygenize the blood; in the other, to rouse the sensibility of the brain and *medulla oblongata.*]

The difference in the appearance of a person in a state of syncope, and of one that is labouring under asphyxia, is equally well marked, In syncope the face is pale and bloodless, the features sunk and contracted, and the eyes partially or entirely closed. In asphyxia, on the contrary, the face is livid and bloated, the lips swollen, and the eyes open. But distinct as these appearances may be in pure and uncomplicated cases of each affection, yet they do frequently, in actual practice, run into one another, and are conjoined in greater or less proportion, so that they lose much of their value, and we are obliged to be guided in our treatment, rather by general rules than by an endeavour to ascertain how much of each case is referrible to asphyxia, and how much to syncope.

The essential practical difference between syncope and asphyxia is, that in the former case the contractions of the heart, though much enfeebled, may continue for a considerable, almost an indefinite, period; whereas in the latter they quickly cease.

[Mr. E. thinks that four minutes is nearly the utmost length of time at which a patient may be recoverd from asphyxia, although this period may be considerably larger when the cause is from syncope. What then is to be done in a case of drowning when the patient has not been above four minutes under water.]

The means recommended by the Humane Society for the recovery of persons from drowning, and employed at their institution in Hyde Park, appear to be well adapted for the treatment of this stage of asphyxia. They consist, after the nose and mouth have been cleared of any mucosities, in the application of heat by means of a bath at about the temperature of 100°, until the natural warmth is restored, in the employment of brisk friction, and in passing ammonia to and fro under the nostrils. It is evident that these measures can have no direct influence upon the heart and lungs; but can only act as general stimuli to the system, equalizing the circulation if it be still going on; and, by determining to the surface, tending to remove those congestions that are not so much the consequences of the asphyxia, as of the sojourn of the body for several minutes in cold water. They would, therefore, be of especial service during the colder seasons of the year. A hot bath may also, by the shock it gives, excite the reflex respiratory movements. With the view of doing this with a greater degree of certainty, I would suggest that cold water be sprinkled or dashed upon the face at the time that the body is immersed in the hot-bath, as in this way a most powerful exciting influence can be communicated to the respiratory muscles; and the first object of treatment in all cases of asphyxia, the re-establishment of respiration, would more rapidly and effectually be accomplished; deep gaspings ensuing, by which the air would be sucked into the remotest ramifications of the air-cells, arterializing the blood that had accumulated in the pulmonary vessels, enabling it to find its way to the left cavities of the heart, and thus to excite that organ to increased activity. The recommendations of the Humane Society appear to be most judicious, as far as regards those cases of asphyxia in which the sufferer has been but a short time submersed, and in which the heart is still acting, and the respiratory movements have either begun of their own accord on the patient being removed from the water, or in which they are capable of being excited by the shock of a hot-bath, aided, as I would suggest, by the dashing of cold water in the face. The lungs should, at the same time, be inflated, by compressing the chest and abdomen, so as to expel the vitiated air, and then allowing them to recover their usual dimensions by the natural resiliency of their parietes. A small quantity of air will, in this way, be sucked in, each time the chest is allowed to expand, and thus the re-establishment of the natural process of respiration may be much hastened. This simple mode of restoring the vital actions should never be omitted, as it is not attended with the least danger, and does not in any way interfere with the other measures employed. If, by these means, we succeed in restoring the proper action of the respiratory movements, it will merely be necessary to pay attention to some points of the after treatment that will presently be adverted to. Should we, however, fail in restoring respiration, we should have recourse to other means that will immediately be mentioned.

We now come to the treatment of the second class of cases, those in which the action of the heart has entirely ceased, or in which the sufferer has been submersed for more than four minutes.

When a person is withdrawn from the water, after having been immersed for a few minutes, the surface of the body is invariably cold and the vessels constricted. The first indication of treatment, therefore, that naturally presents itself is the application of warmth, so as to restore the natural temperature, and as soon as the circulation may be re-established, by determining to the surface, to relieve internal congestions. Two questions, however, present themselves *in limine.*

1*st*, What temperature is it advisable to employ?

2*d*, How is the warmth to be applied?

The intimate connection between animal heat and respiration is well known to all physiologists; the temperature of an animal being in proportion to the quantity of air that it consumes; and, (as every one knows,) in hybernation, a condition that presents many analogies with asphyxia, the respiratory function is much enfeebled, and the evolution of animal heat greatly diminished. These facts are so universally known, that it is needless for me to do more than allude to them as illustrations of the subject under consideration. Edwards has further shown that an increase of temperature compels an animal to consume more oxygen; that when the temperature of the medium in which an animal is placed is raised, the activity of its respiratory functions must be proportionally increased, and experiment has proved, that if the temperature of animals in a torpid condition be suddenly raised, fatal results are very apt to follow. These facts are of much value in determining the degree of heat that ought to be applied to man when his vital actions are depressed. The Humane Society recommend a bath of a temperature of from 98° to 100° or, "as hot as the hand can bear without pain," as well as hot bricks, bottles of hot water, or blankets wrung out of hot water. Now this degree of heat may perhaps be applied with safety to persons who have been immersed during the summer months, when the temperature of the water is between 50° and 60°; but if any dependence can be placed on the observations of Edwards, which are most trustworthy, it would unquestionably be far too high to be safely applied to persons who have been immersed during the winter, when the temperature of the water is perhaps but little above 32°. In this case I should certainly (being guided by these observations) recommend that the patient be not at first exposed to a greater degree of heat than from 85 to 90 degrees.

The next subject for consideration is, to say the least, an equally important one; I allude to the nature of the medium through which warmth is to be applied; and although the warm bath would appear to be the most efficacious means of accomplishing this, yet I perfectly agree with the opinion of Drs. Kay and Carpenter that its employment is open to very serious objections, and is most decidedly opposed to two well-ascertained facts in physiology; namely, that the integument, even in man, acts as a respiratory organ, and that the direct influence of air upon it acts as an excitor to the respiratory movements.

That the skin acts as a respiratory organ of much importance in the lower animals, is so familiar a fact that I need not dwell upon it.

[This being the case, Mr. E. thinks it preferable to use the hot air bath instead of hot water.]

The apparatus necessary for applying hot air is exceedingly simple. The patient, after being properly dried, should be laid on the kind of bed, if it be at hand, that was used for cholera patients, and which is at present occasionally, I believe, employed at the Receiving-House of the Humane Society. It is furnished with a tin mattress for receiving hot water. This mode of applying heat has the additional advantage over the hot bath, of the temperature being gradually and progressively increased by it, whereas the converse is the case in a bath; which is at the highest temperature at the moment that the body is immersed, and rapidly cools afterwards. If these means could not readily be put into practice the temperature of the room in which the patient lies might be raised to 70 or 80 degrees, or the body might be exposed to the influence of a large fire, at some distance, however, and a warming-pan covered with flannel might be passed repeatedly over it. Artificial respiration and other means that it might be thought advisable to employ could also be more conveniently applied to a patient lying in a bed than to an inanimate body supported in a bath. These advantages, however, great as they indubitably are, I look upon as secondary in comparison to the very important one of the exposure of so large a mass of blood as that which is contained in the capillaries of so vascular an organ as the skin to the influence of an oxydizing agent.

Whilst heat is being applied in one or other of the ways above mentioned, friction, as recommended by the Society, should be employed, either with the hand or with a horse-hair glove, or a soft flesh brush, so as to equalize the circulation as rapidly as possible, and to stimulate the action of the cutaneous vessels.

[The most important question connected with this subject, is the best way of employing artificial respiration, although this practice is not perhaps sufficiently attended to in general, and some time ago was not by the Royal Humane Society, which stated, in one of its reports, that "artificial respiration should be considered a secondary means." Mr. Woolley, however, employs artificial respiration "in all those cases in which the respiratory actions are not naturally restored on taking the sufferer out of the water, or on placing him in the hot bath."]

1st, Can artificial respiration re-establish the circulation through the lungs after it has entirely ceased?

2nd, Can it re-excite the contractions of the heart after they have entirely ceased?

That insufflation of the lungs with atmospheric air can re-establish the circulation in *these* organs after it has entirely ceased, and after they have become congested with asphyxical blood, there can be no doubt.

[Mr. Erichsen proves the correctness of this opinion by experiments in which he was assisted by Dr. Sharpey.]

The only way in which the influence of artificial respiration in restoring the heart's contractions, after these have entirely ceased, can be accurately determined, is, after an animal has been asphyxiated, to lay open the chest and expose the heart before this organ has ceased to act; and then, when its contractions have ceased, to begin the inflation of the lungs, and to note the effect produced. This I have frequently done at least a dozen times, and I can most distinctly state, that I have never in any one instance been able, by the inflation of atmospheric air, to restore the contractions of the ventricles, if they had once fairly ceased, notwithstanding that the blood in the pulmonary veins and the left auricle became florid and arterial in the course of a few minutes. I have, indeed, occasionally noticed slight convulsive twitchings and tremulous motions in the ventricles, but never anything like regular contractile movements. What is very remarkable, however, is that very commonly the right auricle, and sometimes the left one, begins to contract regularly and forcibly after artificial respiration has been kept up for some length of time.

But although artificial respiration may fail in re-exciting the contractions of the heart when these have once ceased, are we on this account to discard its judicious employment in the treatment of asphyxia? I think not; for if we fail in restoring the action of the heart by a means that acts so directly upon it as that of supplying its left cavities with arterial blood does, we shall most certainly be unable to accomplish it by such a measure as the application of warmth, the employment of friction, &c., which can only exert an indirect influence upon it; and which can do nothing more than maintain or equalize the circulation if it is still being carried on; but which are utterly unable to restore the contractions of the heart, or to remove the cause that has occasioned their cessation; and the less reason is there, I think, in not employing artificial respiration, as it does not, in the slightest degree, interfere with the administration of those other remedial measures that it may be thought desirable to have recourse to in the treatment of asphyxia.

The object of most of the measures employed in the recovery of persons who are asphyxiated, is necessarily to excite, in every possible way, the suspended function of respiration, and through it, the heart's action, and surely there can be no more direct way of effecting this than to employ insufflation of the lungs, which, as has been shown, rapidly unloads the congested condition of those organs and of the right side of the heart, supplying arterial blood to the left cavities, which will, if that organ be still contractile, immediately be propelled through the arterial system, stimulating the respiratory tracts of the nervous centres, and thus conducing materially to the re-establishment of normal respiration.

How, then, ought artificial respiration to be employed so as to act safely and effectually? Inflation from the mouth of an assistant is objectionable, as air once respired is not fitted for the support of animal life, and *à fortiori*, for the resuscitation of the few sparks that may be left in the cases in which it is desirable to employ this means; and this impurity would, I think, fully counterbalance any benefit that might be derived from the increased temperature of the air so introduced,—the usual reason for which this mode of insufflation is usually recommended.

The bellows, if properly constructed, so that the quantity of air injected may be measured, are no doubt very useful, and, if furnished with Leroy's trachea pipes, or what is better, with nostril-tubes, may be safely employed by medical men. But the safest, and at the same time, a very efficient mode of introducing pure air into the lungs is either by means of the split sheet, as recommended by Leroy and Dalrymple, or else by alternately compressing the chest and abdomen with the hand, and then removing the pressure, so as to allow the thorax to expand by the natural resiliency of its parietes; and thus each time it expands to allow a certain quantity of air to be sucked into the bronchi. The quantity introduced need not be large; for, by the laws of the diffusion of gases, if fresh air be only introduced into the larger divisions of the bronchi, it will rapidly and with certainty find its way into the ultimate ramifications of these tubes. This last means of inflation has the additional advantage of resembling closely the natural process of respiration, which is one of expansion from without inwards, and not, as when the mouth or bellows are used, of pressure from within outwards. In one case, the lungs are as it were drawn outwards, the air merely rushing in to fill up the vacuum that would otherwise be produced within the thorax, by the expansion of its parietes; in the other case they are forcibly pressed upon from within, and driven outwards.

It has already been shown, that when the contractions of the ventricles have once fairly ceased in animals, as determined by laying open the chest, they cannot, in general, be re-excited by any of the means that are in ordinary use. This is in accordance with the most trustworthy observations on the human subject. The question, therefore, necessarily presents itself, are we to leave all those persons who have been asphyxiated, and in whom the action of the heart has ceased, to their fate; and is there no possibility of devising some means by which the contractions of the heart may be re-excited and the circulation renewed? Before attempting to restore the action of the heart it is absolutely necessary to supply its left cavities with arterial blood. The reason of this is twofold. For, in the first place, as the contractions of the heart have ceased, as has already been shown, in consequence of the want of the natural stimulus to that organ—arterial blood—it is of course necessary that this stimulus be supplied before they can be re-excited; and, in the second place, even if the contractions of the heart could be re-excited the circulation could not be renewed with black blood. The only means by which the left cavities of the heart could be supplied with red blood would necessarily be the oxygenation of that contained in the lungs, which, as has already been shown, can readily be effected even with common air. These considerations induced me to try whether the same object could not more readily and rapidly be accomplished by the introduction of pure oxygen into the lungs; and the cavities of the heart be thus rapidly filled with a highly oxygenized and very stimulating fluid.

In several experiments it was found that, not only after the contractions of the ventricles, but also, in some cases, those of the auricles, had fully and entirely ceased, the action of the heart could be restored by inflating the lungs with oxygen gas. And this, it appears to me, is a result of some importance, as regards the treatment of asphyxia. There can be little doubt but that the revival of the contractions of the heart in these cases was due to the very rapid arterialization of the blood in the lungs, and its passage into the left side and tissue of the heart before the irritability of that organ had become so far extinct that it was unable to contract on the application of its usual stimulus; and that the reason why, by the inflation of the lungs with common air, it is very difficult, if not impossible, to excite perfect contractions of the ventricles, although tremulous movements in them, and proper action of the auricles may be set up, is, that the blood does not become arterialized soon enough to reach the left ventricle, and to permeate the tissue of the heart in sufficient quantity before that organ has lost its power of contracting on the application of this stimulus.

[Several subsidiary means have also occasionally been resorted to, as electricity, saline injections into the veins, the inhalation of alkaline vapours, &c. Electric or electro-magnetic shocks may probably assist other means. This method of treatment is very efficacious in cases of narcotic poisoning, when complete insensibility exists; which was first pointed out by Mr. Erichsen, in 1841.]*

Edinburgh Medical and Surgical Journal, Jan. 1845, *p.* 1—56.

[The following remarks by Dr. George Wilson, lecturer on chemistry, Edinburgh, on the employment of oxygen in asphyxia, bear upon this interesting subject.

Hitherto, the means of obtaining oxygen have been too tedious and troublesome to be resorted to when suddenly required, and great objections exist to its being kept ready prepared. The profession no doubt generally acquiesce in Dr. Roget's views on the subject of inflating the lungs with oxygen gas instead of common air, viz. "that it is exceedingly probable that if a supply of that gas were immediately at hand, together with every facility in the way of administering it, its efficacy in restoring animation would be superior to that of common air." But it seldom happens that they are in complete readiness, and it would in such urgent cases be wrong to waste time by waiting for them.]

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* The Fothergillian gold medal, of the value of thirty guineas, has been presented to Mr. Erichsen, by the Royal Humane Society, for this valuable Essay.

Within the last two years, however, a modification of the well-known process for preparing oxygen from chlorate of potass has been introduced, which appears to bring oxygen quite within reach of the medical man as a therapeutic agent. It consists in mixing the chlorate with a tenth of its weight of the black oxide of manganese, the black oxide of copper, or of certain other oxides, and applying heat as is done in the ordinary process with the unmixed chlorate. The chlorate itself does not yield oxygen till it is fused, and although it gives it off with considerable rapidity at first, at a subsequent stage of the process it becomes thick and pasty from the formation of hyperchlorate of potass, and the temperature must be raised to nearly that of a red heat to secure the evolution of the remaining oxygen. During the last stage, moreover, the salt cakes and conducts heat very badly; and from all these causes the evolution of oxygen is extremely fitful and irregular. The extraordinary effect of the simple addition of a little metallic oxide in preventing all this, and quickening the evolution of oxygen, can only be appreciated by those who have witnessed it. But it may give those surprise who have not some conception of the difference it occasions, if I mention, that with a small glass retort heated by a single spirit-lamp, containing the chlorate of potass mixed with a tenth of its weight of oxide of manganese, it is easy to obtain 200 cubic inches of oxygen within four minutes of the first application of the flame. The gas begins to come off in a few seconds after the light is applied, and literally gushes in a full stream till the whole is evolved. The metallic oxide suffers no change; but the chlorate, at a temperature much below that requisite if it be heated alone, parts with the whole of its oxygen and becomes converted into chloride of potassium. The mode in which the oxide acts in so remarkably increasing the rapidity with which chlorate of potass can be decomposed, has been made the subject of special inquiry by Mitscherlich, and will be found discussed in the recent part of Taylor's Scientific Memoirs.

The quantity of gas which can be procured within a given time, is the point of greatest importance in reference to its medical application, and this will depend entirely upon the amount of material heated at once. The practical question therefore is, can a sufficient amount of the mixed chlorate and oxide be conveniently heated at a single time, to supply oxygen in the quantity requisite for its effectual application to the maintenance of artificial respiration? I think the answer is unquestionably in the affirmative.

When air is employed in inflation, 100 cubic inches are recommended to be thrown in each time, in the case of a full-grown adult. I suppose, therefore, that if 300 or 400 cubic inches of oxygen could be supplied each minute, it would suffice.

Two retorts of 12 oz. liquid capacity, heated by argand or rose burners, would suffice to obtain the gas at this rate. Should it be thought desirable to have it supplied in larger quantity, it would only be necessary to enlarge the containing vessel, which in no supposable case need be of formidable dimensions. The retorts, with a view to convenience and economy, might be constructed of sheet brass or iron, and could be heated by gas-burners in the ordinary way, by gas burned above wire-gauze, or by placing them at some little distance over a common fire. In every case it would be desirable to have at least two similar generators, so that when the contents of one were exhausted, the other might immediately be substituted for it, while it was refilled.

The proportion of metallic oxide recommended to be added is a tenth of the weight of the chlorate; but from experiments made in my laboratory by my assistant, Mr. David Forbes, it appears that the quantity of oxide may be advantageously increased, and that the chlorate yields its oxygen most freely when mixed with a fourth or a fifth of its weight of the oxide.

Although the metallic oxide suffers no change, and may be used over and over again any number of times, provided it be heated to redness after the chloride of potassium resulting from the decomposition of the chlorate has been washed from it, its action is not so purely mechanical that it can be replaced by other inert bodies. Neither sand nor clay, in a state of coarse or fine division, has any effect in increasing the evolution of oxygen from the chlorate, which is so far to be regretted, as their cheapness and abundance would have been preferable to the rarer and more expensive oxides: but after all, oxide of iron is not very costly.

What I should propose then, is, that at our public hospitals, lying-in institutions, humane societies' rooms, police-office stations, and wherever else cases of asphyxia frequently come before the medical officers, the mixture of chlorate and metallic oxide should be kept ready for use. Along with it there should be provided glass or metallic retorts, with suitable arrangements for heating them, and one or more gas holders to receive the gas. The best form of gas holder, I believe, would be that adopted at the gas works, viz., a cylinder or drum of sheet metal, closed at one extremity, suspended with the mouth downwards in a cylinder like itself inverted, filled with water. The drum being hung by chains passing over pullies and terminating in counterpoising weights, is filled with water by sinking it in the lower cylinder or well, whilst the air is permitted to escape. When oxygen or any other gas is poured into the drum, the latter rises out of the well to a height proportionate to the quantity sent into it. The convenience of this form of arrangement is, that gas can be drawn off by a properly arranged tube from the upper part of the drum, whilst it continues to be thrown in from below. To the exit or delivering tube, a flexible pipe of convenient length and dimensions should be attached at one of its extremities, and at the other made to screw or otherwise fit into the aperture provided for the entrance of air in the bellows to be used for inflation. A valve in the pipe of the bellows opening outwards, would provide a complete security against any return of the oxygen when the handles of the instrument were separated, so as to produce a vacuum within it; but it would not be absolutely necessary. With gas holders of the construction recommended, kept full of water, and the rest of the apparatus and the mixture ready for immediate use, inflation with oxygen might be commenced within a few minutes after a case was brought in, and might be carried on for any length of time. Experience would soon decide what was the most convenient form and size of generating vessels, a point on which I cannot at present speak so confidently as I shall be able to do in a few days.

So far as the expense of the materials is concerned, it would present no serious objection to the employment of the gas.

The original outlay for gas holders and other apparatus might be about £5. Chlorate of potass, in consequence of its large consumption in the preparation of lucifer matches, can now be obtained for 6d. an ounce retail, or 4d. wholesale, and an ounce will yield, as we have seen, 540 cubic inches of oxygen. I suppose none of our benevolent institutions would think a man's life purchased too expensively at the cost of even many ounces of the chlorate at that rate. There is every reason, however, to expect that the chlorate will soon be cheaper, as a method of preparing it from bleaching powder has been recently recommended anew to the attention of manufacturers, as supplying it quite pure at a lower rate than the old process.

On this point, however, I am less anxious to insist, than on the rapidity with which oxygen can be procured in a state of purity. The latter point I have examined only by its action on combustibles, which is that of the purest oxygen. I propose, however, when I get the necessary arrangements made, which will be speedily, to breathe it myself, as the best means of ascertaining its purity in reference to respiration. I may remark here, however, that it would always be advisable to pass the gas through an intermediate vessel containing a little caustic potash in solution, both to detain any carbonic acid resulting from the presence of combustible matter in the original mixture, and to arrest any of the latter carried over mechanically in the current of oxygen. A Woulfe's bottle for this purpose would cause no great complication of the apparatus, and would be an effectual means of securing the purity of the gas.

In conclusion, I would observe that this method of administering oxygen appears peculiarly applicable to midwifery hospital practice. The quantity required for the inflation of the lungs of a still-born infant could easily be supplied as rapidly as wanted by even a small apparatus; and the whole arrangement for yielding oxygen could be made ready in working order as labour began, so as to secure the gas being forthcoming the moment it was wanted. The method proposed would apply to every form of asphyxia occurring in hospital practice, to cases of poisoning with opium in that and perhaps in private practice also, and to other states of disease or injury which will at once occur to practical men.

Northern Journal of Medicine, April, 1845, *p.* 312.

14.—ON PULMONARY APOPLEXY, &c.

By L. Byron, M D., Surgeon to the County of Meath's Hospital.

[The true nature of fever is still unknown to us, notwithstanding all that has been written on the subject,—whether it be but a chief mode of reaction, intended to relieve either general disease by general increased momentum, or in morbid local affections to afford aid to parts incapable of restoring themselves by their own powers, as is perhaps the opinion now most generally held, or whether, as Dr. Willis has ingeniously advanced, and as we have noticed in Retrospect X., Art. 1, it be dependent upon a suppressed or morbid action of the functions of the skin, we do not feel competent to decide.

Dr. Byron gives a sketch of the treatment of fever by tartar emetic and opium as follows, apologising for its introduction from the great practical importance of the subject, and thinking that by so doing the value of this treatment in *asthenic* pulmonary apoplexy may thereby be better appreciated.]

Rasoni and Thomanasini have generally been considered the inventors of this mode of curing fevers, but unjustly, as their plan was but a revival of the practice of the older physicians. Doctor Maryatt of Bristol has, in his work on Therapeutics, the last edition of which he published about 1790, this passage:—" Any fever may soon be extinguished by the use of the following powders: Take of antimony, five grains; white sugar or *nitre*, a drachm; let them be well rubbed in a glass mortar, and divided in six powders, one to be taken every three hours, and notwithstanding the nausea the first may possibly occasion. If they bring on a diarrhœa they should still be continued, and it will soon cease. If these are taken, which is most commonly the case, without any manifest inconvenience, let there be seven grains in the next six powders, and in the next ten. Here I beg leave to retract what I said in some former editions of this work, viz.: that till sickness and vomiting was excited, this notable medicine was not to be depended on; for I have seen many instances wherein a paper has been given every three hours, of which there have been ten grains in six powders, without the least sensible operation, either by sickness, stool, sweat, or urine; and although the patients have been unremittedly delirious for more than a week, with subsultus tendinum, and all the appearances of hastening death, they have perfectly recovered, without any medicinal aid, a clyster every other day excepted."

[Laennec, following Rasoni's practice, was the first to bring it into notice in modern times; for our knowledge of this we are indebted to his pupil, Dr. Delegarde. It has been sometimes tried in England, and was adopted in Ireland in 1825.

Dr. Sigmond observes well, that as we are not yet acquainted with the diathesis which bears these enormous doses of tartar emetic, the sacredness attached to human life is too great to allow us to trifle with it; and that it is only in diseases which quickly run their course, and would terminate unfavourably, that we should be justified in trying this plan of treatment.]

The combination of tartar emetic or hippo with opium, was well known during the last century, as a means of neutralizing their nauseating effects. "It is well known to medical men," says Dr. Curry, "that when either emetic tartar, antimonial wine, or ipecacuanha in powder, is given, joined with opium. each counteracts the effect which the other would have had, if administered alone; the opium generally preventing the emetic tartar, &c., from exciting vomiting, and the latter, in their turn, entirely suspending the stupefying power of the opium. The consequence generally is, that they operate upon the skin, and occasion a very copious sweating."—*Curry*, p. 98.

Rasoni, already referred to, has these remarkable words; after saying that he commenced with twenty-four grains of tartar emetic every twenty-four hours, he adds:—"On the second day, if no ill effects have arisen, and no untoward symptoms of any description have presented themselves, the quantity of the antimony may safely be increased; if any mischievous sign occurs, *syrup of poppies* may be added to the solution."

Dr. Graves, indeed, has given us very interesting examples of recovery from advanced stages of typhus fever; where, no doubt, less hazardous means had previously failed, and where he was therefore justified in trying a doubtful and hazardous remedy. "Melius anceps remedium quam nullum;" but the Doctor has not given any unsuccessful cases, and hence junior practitioners, for whom, I presume, those lectures were mainly intended, might fancy the remedy suited to all cases of low spotted typhus fever, accompanied with restlessness and delirium. It is much to be feared that this very error has been committed.

A close inspection of Dr. Graves' cases teaches this remarkable lesson; the subjects of them were all young, free from every disease or ailment save the fever; and although subdued by it, it is fair to infer that they possessed a tenacity of life not to be found in the old, the intemperate, or otherwise diseased, none of whom are reported to have recovered under this "heroic" treatment.

It may be asked, what are those "milder means" to which I refer as deserving trial before using tartar emetic?—I answer—those are, or ought to be, known to every experienced physician. One, however, I will mention, as likely, ere long, to hold a prominent position in the treatment of low typhus fever, viz., the modifying and sedative effects of mild opiate enemata, combined with the saline treatment, as recommended by Dr. Bright.

CONGESTIVE PULMONARY APOPLEXY.

This form of pulmonary apoplexy usually falls upon individuals who have passed the meridian of life; those whose constitutions have been more or less impaired by over exertion; by intemperance, or by the inhalation of damp, noxious, or unwholesome atmospheres.

[A gentleman, æt. 43, of sanguineous temperament, accustomed to violent exercise, suddenly changed his mode of life, discontinued all but carriage exercise. The first indication of this mode of life disagreeing with him, was the appearance of furunculi on the hands and body. After about four years his legs felt less strong, and he had general lassitude, with aching pains about the knees and ankles.]

He one night awoke shortly after falling asleep, finding his mouth full of blood; this was followed by five or six discharges of the same kind in quick succession: the entire amount of blood discharged was probably about three ounces. His pulse at this time was 70, moderate and regular; had no heat of skin, hurried respiration, nor the slightest indication of indisposition beyond what has been mentioned.

His chest was perfectly clear on percussion; his respiration natural, except a mucous rattle in the large bronchi, owing to portions of blood which were discharged in a coagulated manner during the night.

About fourteen ounces of blood were taken from his arm without producing any sensible effect upon his pulse, or in any other way; his bowels were open and a blister laid upon his chest; the acet. plumbi, with P. ipec. C. and mineral acids, were also given. Animal food and wine were laid aside; he was confined to bed for the following week; his head and shoulders were elevated, and his apartment ordered to be kept cool. In this way he progressed most favourably. On the second and third days there was a slight return of fresh bleeding: but although pieces of coagula were thrown up for about a fortnight, they appeared to be portions of coagulated blood which lodged in branches of the bronchi; this was evident from their bearing the impress of the air-tubes which contained them.

Small bleedings from the arm were resorted to every eight or ten days, followed by a small blister, for upwards of two months, when he gradually resumed his ordinary avocations. The bleedings, however, and the blisters, were resorted to from time to time, but at longer periods of intermission, for six months afterwards.

Little more than twelve months from the first seizure a second discharge of blood, in all respects resembling the former one, took place; he awoke, as he did then, with his mouth filled with blood, which also soon coagulated.

The recurrence of the complaint was now ascribed to fatigue and mental anxiety, but owing to a variety of circumstances, was not so easily arrested as before. No fresh discharges of blood took place at the end of three weeks, and only three previously; and on no occasion did the quantity spit up amount to more than two ounces. Fearing the existence of some organic disease, of which the hæmoptysis was but a symptom, his chest was closely examined by almost every medical man of eminence in Dublin, but no disease could be discovered.

In addition to the plan of treatment adopted on the first occasion, wine and beer were altogether prohibited; he was ordered to remove his dwelling to a dry, elevated locality; avoid fatigue or great bodily exertion; and should a sense of pain, formication, or constriction arise in any part of his chest, a moderate bleeding should be taken from his arm; a blister laid upon the affected part, and the other means of relief formerly resorted to, derivatives, &c., resumed and repeated as might seem to be necessary.

An occasional blister was laid upon his chest during the following year; no wine nor malt liquor were used by him for five years, and then but sparingly. The foregoing rules were strictly adhered to; and now, *thirteen* years from the date of the first attack of hæmoptysis, he is in the enjoyment of perfect health, and possesses greater vigour of mind than at any former period of his life.

[Some physicians doubt the existence of the *apoplexia cataleptica* of Cullen; others admit it to be an idiopathic, but uncommon disease. Sauvages states that it is a paroxysmal disease, "in which the body and limbs retain their fixed posture, whether the patient be sitting or standing."

Dr. Byron ends his excellent paper by the following inferences:]

1st. Hæmoptysis, pulmonary apoplexy, or both combined, may occur independent of any organic disease in the lungs themselves or elsewhere; and although examples of recoveries from such be rare, still they are of sufficient frequency to establish a rational system of treatment suited to each particular variety.

2nd. Hæmoptysis rarely attends the asthenic form of pulmonary apoplexy, whereas that symptom is with far greater constancy present in the sthenic variety of that complaint.

3rd. Whereas the sthenic pulmonary apoplexy seems to arise from turgescence of the larger trunks and branches of the pulmonary sanguiferous system, the capillaries are the vessels mainly concerned in the asthenic variety.

4th. The sense of heat, formication, &c., generally present in the sthenic pulmonary apoplexy, is with equal uniformity absent in the asthenic kind.

5th. The more sthenic this species of apoplexy may be, the less does it seem to be under the influence of the nervous system; and *vice versa*, the asthenic variety of that complaint, the very lowest kind perhaps excepted, seems much modified by those mysterious influences.

6th. Reduced vital energy, arising from damp, or otherwise unwholesome gases, intemperance, or other irregularities in living, &c., are most apparent in that variety of the complaint which I have denominated "simple congestion," and which seems to involve both the large venous trunks and the capillaries.

7th. That "cataleptic pulmonary apoplexy" being excited, and probably maintained under the influence of the nervous system, is but imperfectly understood. That the force of habit in disorders of this kind, coupled with the absolute danger to the brain, stomach, or lungs, from a congested state of their vessels, teaches the practical lesson, that such a state of the system is dangerous in both these ways, and whether under the denomination of catalepsy, hybernation, or Mesmeric trance, should be avoided, and when present, cured *with all possible speed.*

Dublin Journal of Medical Science, March 1845, *p.* 85.

15.—CONCLUSIONS REGARDING TUBERCLES.

1. Tubercle is a secreted substance, deposited under the form of yellowish opaque grains. It grows by superposition.
2. There are two species of tubercles, the simple and the multiple; the latter forms by the aggregation of several simple tubercles. It contains organized parts within.
3. Granulations are a form of chronic pneumonia; they do not pass into tubercles.
4. The softening of a tubercle depends on the action of the surrounding living parts.
5. Simple tubercle never softens from the centre to the circumference.
6. The multiple tubercle often softens from the centre to the circumference.
7. The most frequent seat of tubercle is the cellular tissue. Tubercle is sometimes to be seen in the lymphatic vessels. Tubercle does not occur on the free surface of mucous membrane so long as it is entire.
8. Tubercles are often hereditary.
9. The lymphatic and sanguineo-nervous temperaments are predisposed to tubercles.
10. Infants and females are most subject to tubercular diseases.
11. Inflammation is an exciting cause of tubercles.
12. The same is to be said of passive congestions, of over-activity or deficient activity of an organ, and probably also *of the alterations of the fluids.*
13. No certain sign of the rise of tubercles is known.
14. The hectic fever which occurs in tubercular diseases results from the act of elimination.
15. To prevent the tendency to tubercles, we must counteract the influence of hereditary disposition, of temperament, of age, of sex.

16. In persons with predisposition to tubercles, inflammations should be guarded against with the greatest care, or arrested as promptly as possible.

17. The same rules apply to passive congestions.

18. The absorption of tubercles is very probable.

19. To obtain the cure of tuberculous ulcerations we must prevent the formation of new tubercles, and confine the work of elimination within certain limits.

20. Tubercles may remain long in the organs in a latent state; to obtain this result we must seek to arrest the process of elimination by antiphlogistic means, and above all by revulsives.—*From an Essay by M. Lombard.*

Northern Journal of Medicine, Feb., 1845, *p.* 234.

16.—*On the average of Cases of Consumption Cured.* M. Boudet states, that in the post-mortem examinations of forty-five subjects, between three and fifteen years old, he had observed the cure of consumption in twelve cases. In one hundred and sixteen individuals, aged between fifteen and seventy-six years, tubercles in the lung or bronchial glands had become innocuous in ninety-seven cases, and had wholly disappeared in sixty-one. In one hundred and ninety-seven autopsies promiscuously taken, he found ten instances in which, at least, one cavern completely cicatrized existed in the lung; and in eight cases one or more cavities were found in different stages of cicatrization.

Lancet, March 22, 1845, *p.* 329.

17.—*Various opinions respecting Hooping-Cough.* [Dr. Waller has tried belladonna in two cases of hooping-cough with the best results. He gave the extract in a twelfth of a grain dose, three times a day, to a child four years of age. In his cases there was no indication of the presence of inflammation, but simply the spasmodic cough. Prussic acid and conium had failed in affording any permanent or marked relief.

Mr. Crisp views the disease generally as inflammatory, or at least congestive, and usually finds the antiphlogistic plan the best treatment in the early stages. He has proved prussic acid of service only for a day or two.

Dr. Willshire has treated simple uncomplicated hooping-cough with two or three ipecacuanha emetics, one every alternate morning, followed for two or three days with nauseating doses of antimony, and has found this plan of great service in the early stages. Conium and ipecacuanha were afterwards useful. He is afraid to employ belladonna, as some have found that it has a tendency to increase vascular action in the brain, and to produce hydrocephalus.

Dr. Chowne lays particular stress on the necessity of keeping the patient in a warm temperature, and using every means to prevent his catching cold. Nauseating doses of ipecacuanha were frequently of benefit. He does not believe that emphysema could be produced by hooping-cough.

Dr. Clutterbuck looks upon hooping-cough as a specific disease, produced by a specific cause—an inflammation of the bronchial membrane of a specific character, apt to induce inflammation of other organs, as of the lungs or head, and these complications constitute the characters of hooping-cough. He has little confidence in any remedy for this affection. The disease should be narrowly watched, with the view of prevention rather than of active treatment; if mild, it would terminate spontaneously; if it threatened the complications alluded to, decided antiphlogistic means were demanded.]

Dr. Golding Bird regards hooping-cough, in the first stage, as invariably inflammation of the lining membrane of the bronchial tubes, larynx, and trachea, of a specific character, and implicating in some peculiar manner, the par vagum. This inflammation lasted a definite period, which was influenced by constitution, and other causes. In the second stage of the affection, the disease was *nervous*, the specific irritation of the par vagum being kept up, altogether independent of inflammation; or, if this were present, it was accidental: the hooping was afterwards protracted, by the influence of habit. In the first stage, the remedies for bronchitis were advisable—such as emetics, diaphoretics, the warm bath, and a warm temperature. When the inflammatory stage was passed, the object of the practitioner was to subdue irritation in the par vagum, and this was effected by the agency of narcotics—such as conium, in conjunction with the carbonate of potash, hemlock, and hydrocyanic acid. Embrocations to the spine and chest were also useful. When bronchorrhœa became troublesome, small doses of alum, with sedatives were employed with advantage. When the bronchorrhœa had ceased, tonics were indicated,—the kind of tonic to be determined by the constitution of the patient. Emphysema does not, in his opinion, occur as the consequence of hooping-cough.

Dr. T. Thompson has found, in some cases where belladonna was given, that the poisonous, rather than the curative effects of that remedy developed themselves, even though the doses administered were remarkably small. With reference to the irritation of the par vagum in hooping-cough, he relates a case in which this nerve had become exposed, from the formation of an abscess, or other cause; and it was remarkable, that when the nerve was in contact with the air, a spasmodic action resembling hooping-cough was produced: when the nerve was covered over by a cicatrix, the hooping-cough ceased.

Lancet, *Feb.* 1, 1845, *p.* 137.

[Dr. Golding Bird states in another paper that in one stage of hooping-cough, alum is a most valuable remedy, but like every thing else to which the term specific is applied, it will only disappoint the practitioner, unless used with proper discrimination.

It is the second, or nervous stage, characterised by spasmodic cough, with bronchial flux, unaccompanied by febrile action, that its powers are so well marked. In the first stage of course antiphlogistic measures must be adopted.]

But after the persistence of the disease for a week or two; after all inflammatory symptoms have subsided; and when, with a tolerably cool skin and clean tongue, the little patient is left severely distressed by the more or less copious secretion of viscid mucus from the bronchi, each attempt to get rid of which produces the exhausting and characteristic cough; the alum will be found of great value. I have not yet met with any other remedy which has acted so satisfactorily, or given such marked and often rapid relief to the child. The dose, in my hands, has generally ranged from two to six grains in children from one to ten years of age, repeated every four or six hours. For a child of two or three years the following formula has generally been employed:

Aluminis gr. xxv. Extracti Conii gr. xij. Syrupi Rhædos ʒij. Aquæ Anethi ℥iij. m. capiat coch. i. med. 6tâ quaque hora.

I have never met with any inconvenient astringent effects on the bowels during the exhibition of this remedy: on the contrary, in more than one instance it produced some diarrhœa. The only obvious effects resulting from its use were, diminished secretion of a less viscid mucus, with marked diminution in the frequency and severity of the spasmodic paroxysms. The question of the modus agendi of the alum in pertussis is not very easy of resolution, but does not quite stand alone; for in the more generally recognised effects of the same remedy in the treatment of colic we have an analogous difficulty. We know that alum does enter the circulation, and consequently pervades the capillary system, for we find it in the urine of persons who are taking it. It must therefore be admitted that this remedy must almost of necessity exert more or less influence on the secreting functions. In this way it *may* control the copious excretion of mucus from a bronchus in whooping cough, or help to diminish spasm in the colon of a patient labouring under colic. It must be admitted, however, that this explanation is not very satisfactory, and that the mode of action of alum is obscure. I may remark that I have administered this drug in the bronchorrhœa of patients with emphysematous lungs, and, in severe cases, with marked advantage.

Guy's Hospital Reports, April 1845, *p.* 139.

M. Subregondi strongly recommends tannin in hooping-cough after the period of excitement has subsided. His practice is to give from a quarter to half a grain every two hours along with some calmant, as the extractum conii. As a purgative during this treatment he uses chiefly the infusion of senna.

It is not stated how the tannin which he employs is obtained. That first used in medicine appears to have been obtained in a state of imperfect purity from powdered oak-bark, by means of lime-water and nitric acid.

It is better obtained from powdered galls, by means of ether,—either by the method of Pelouze or that of Leconnet. The method of Pelouze is by a kind of percolation, that of Leconnet, by maceration of the gall-powder for twenty-four hours in ether, and then applying strong pressure, and if these steps be repeated several times, it appears that 60 per cent. of tannin may be obtained from galls.

Tannin has been recommended in passive hemorrhages and profuse mucous discharges, in marasmus, chlorosis, &c.; but it is doubtful if it have any advantage over catechu, kino, or the extract of logwood.

Northern Journal of Medicine, Dec., 1844, *p.* 120.

[Sir G. Lefevre says on this subject of Hooping-Cough—]

As soon as the febrile stage has subsided, which generally takes place towards the end of the third week, doses of musk seem to have a specific influence. I have seen the most happy effects from its use, both in the general practice of my colleagues, and my own, in St. Petersburg. A grain of musk three or four times a-day, will, in general, arrest the most convulsive species of coughing in a few days.

I have generally, in the early stages, experienced great advantage from the application of leeches to the temples; for I believe that there is very often congestion in the brain, and that the latter, if not previously, is often secondarily, affected.

Medical Chirurgical Review, April 1845, *p.* 372.

18.—*Inhalation of the Fumes of Nitrate of Potass in Spasmodic Asthma.* By JAMES B. HARRISON, M.R.C.S., &c. [A friend of Mr. Harrison's, subject to spasmodic asthma, having seen in a newspaper, inhalation of the fumes of nitrate of potash recommended in that complaint, was induced to try it, which he did with the most perfect success.]

He made use of a piece of blotting paper, about the size of his hand, dipped in a saturated solution of the nitrate of potass, and afterwards dried. This was placed on a common plate, and being ignited, the fumes were speedily sensible in the room. He described its operation "as clearing the passages and gradually opening the air tubes." He said that the respiratory murmur became louder, and less stridulous, under its continued influence. The effect was always produced in about a quarter of an hour, and though he had used the same remedy nearly twenty times, he had never been disappointed in the result.

Lancet, April 5, 1845, *p.* 383.

19.—*Pulmonary Disease arising from Disorder of the Alimentary Canal* [Some interesting cases of this description are given by Dr. Chapman, of Philadelphia, as follow:]

In 1820, I was called into consultation with the late Dr. Monges, to a boy who, with most of the symptoms of the preceding case, particularly the copiousness of purulent expectoration, was so much reduced that the portions of the bones on which he rested, had protruded through the integuments in several places. Discovering that his abdomen was tumid, his tongue furred, his appetite capricious and depraved, and that he was subject occasionally to convulsions, I was led to expect the existence of worms, and under such an impression, anthelmintics were administered. In less than one week, sixty-eight lumbricoides were evacuated, and from that moment he became convalescent and rapidly got well.

Many years ago, a case occurred in this city which attracted great attention. The son of one of our distinguished citizens, swallowing a pin, was soon seized with gastric irritation, followed by cough and other pulmonary affections. These gradually increased till purulent expectoration and hectic fever took place, leaving no doubt of confirmed phthisis and a fatal result. But, at this moment of despair, a small abscess arose in the groin, which, on being opened, the pin was found in it and extracted, it having travelled down through the cellular tissue to this point. Convalescence speedily ensued, ending in a perfect recovery. The subjects of these cases are still living and in robust health.

British and Foreign Medical Review, Jan., 1845, *p.* 30.

20.—*On Pneumonia.* [Mr. Sibson, in his work "On the changes induced on the situation and structure of the internal organs under varying circumstances of health and disease," states that the capillary branches of the pulmonary artery and vein are the primary seat of pneumonia. He says—]

The coats of the artery are changed in structure and texture by a diseased modification in their cell life; they are at first too soft and yielding. The heart's force, through the medium of the blood, thrusts aside and dilates the softened walls, stretches, and lengthens them. At a later period, new material is formed within the vessels, which blocks up the affected capillaries. Parallel with this change is another going on in the capillaries of the same lung, but not in the same diseased part. The inner walls of the diseased capillaries thicken and approach each other, gradually lessening the calibre of the tubes, and at length meet, so as to close the capillaries; ultimately, all the capillaries become obstructed, and, at an advanced stage, destroyed. The air-cells are essentially and in form, subdivisions of the capillaries of the pulmonary artery and re-meetings in those of the pulmonary vein, each filamentous wall consists of a single vessel, and each related webbed wall consists of the interlaced capillary branches of that vessel. The bronchial tubes and the walls of the arteries themselves. are thickened and rendered fibrous by the new diseased vascularity.

Medical Chirurgical Review, Jan 1845, *p.* 47.

21.—*Effect of Warm Climate on Pulmonary Disease.* [Baron Larrey disagrees with most of our medical men in his opinion of the effects of climate on pulmonary disease. He says:]

It is a very fatal error, or perhaps rather a pernicious prejudice, for medical men to imagine that mild and warm climates can effect a cure of thoracic diseases. The cold and humidity, which generally are the determining causes of these affections, doubtless aggravate their symptoms; but, when the mischief has reached the second stage of its career, atmospheric heat almost always does harm instead of good, and very generally accelerates the fatal issue. It is the same with phthisis as with all chronic maladies that are attended with hypertrophy or engorgement of the parenchymatous or membranous viscera.

Medico-Chirurgical Review, Jan., 1845, *p.* 59.

22.—ON CHRONIC DISEASES OF THE STOMACH.

By William Strange, M.D., M.R.C.S E., &c.

[In Retrospect X., Article 29, we noticed the first part of Dr. Strange's paper on diseases of the Stomach, which he divides into five varieties, Atony, Atony with irritability, Acute irritation, Gastralgia, and Chronic gastritis. This division is recommended by the fact that the mode of invasion, in a complicated case of dyspepsia is exactly in this order; for a very great majority of severe gastric diseases, arising in manufacturing districts, or in large towns, have their rise and progress in an atonic state, not of the muscular and nervous tissues of the stomach alone, but of those of the whole frame also, as all practitioners in such districts will readily attest.

Nevertheless, this order is sometimes entirely reversed, the nature of the first attack being that of a sub-acute inflammation, giving rise to neuralgic seizures, or to an acutely irritable state of the organ; and, finally, a permanent atony of the muscular fibre, with derangement of the digesting secretions.

The disease must be treated according to one or other of these plans; the hyperæmic condition tending to the production of diseases, with excess of action, of course requires decided antiphlogistic measures, as much as the anæmic, with which is often associated a scrofulous condition, requires no alterative and tonic treatment.

Neuralgia, or gastralgia, is used in much too loose and general a sense to denote any severe and irregular painful affection of the stomach. True cases in which the paroxysms occur in a distinct manner, without any other functional derangement, though occasionally met with, are rare.

Dr. Strange thinks women are more liable to it than men, and that it is as frequent after the age of childbearing as before. Whatever may have been the previous state of the stomach, when this disease has been of some standing we find the tongue clean and red, the face shows no indications of severe suffering; the flesh is firm, appetite tolerable, digestion good, though slow.]

The time of the attack is frequently in the morning, either before or after breakfast; it may last for one or two hours, and sometimes returns in the evening of the same day. At other times the attack lasts with little intermission for twenty-four or thirty-six hours, and then goes off, leaving the patient much exhausted. The pain is described by the patients as of the nature of cramp, tearing or drawing together the coats of the stomach, or as if the stomach were forcibly held down to the vertebræ. Shooting pains go through to the back, and between the scapulæ; and there are cramps or spasms of the legs, feet, and hands. The extremities are generally cold, and the pulse small and thready. Hot drinks, particularly if the attack comes on early in the morning, pressure upon the epigastrium, heat applied to the stomach and abdomen, and mustard to the feet, relieve the pain, as also does the induction of vomiting.

After the pain has subsisted for a greater or less length of time, in many cases vomiting, or rather regurgitation, of a mucous or watery fluid takes place; tasteless, as in water-brash, or acid, acrid, or grumous. With those patients, who are accustomed to periodical regurgitations, or water-brash, the attack is chiefly in the morning, after breakfast, and dinner is therefore their last meal. The discharge of this fluid is attended with so much relief, that many patients have recourse to some method of provoking its ejection, by putting the finger into the throat, tickling the fauces, &c. There is often an irregular or constipated state of the bowels, although cases are sometimes met with in which diarrhœa accompanies the attack of pain. I have observed that some old persons, who are subject to frequent attacks of cholera, also suffer from neuralgia of the stomach.

But, as has been before observed, cases of gastralgia seldom occur in so distinct and uncomplicated a manner as the foregoing observations would seem to show. More usually the symptoms of neuralgic disease are mixed up more or less with those of chronic inflammation of some portion of the stomach or intestines, or of decided organic disease; from either of which it will not always be easy to distinguish it. When gastralgia is the prevailing or primary disease, however, there is not the same constant nausea, loss of appetite, heat and pulsation in the epigastric region, nor the same muddiness of the countenance with yellow tinge of the eyes and foul tongue, as is the case in chronic gastritis. The urine is clearer, and the bowels not so generally constipated as in inflammatory or irritable states of the stomach.

The well-marked intermission in neuralgia, during which the patient is quite free from pain, although of frequent occurrence also in organic disease, yet, when taken in conjunction with the absence of any tumour to be felt in the epigastric region, and of the characteristic sallowness and yellow tinge of the countenance, are the best criteria to distinguish it from cancer of the stomach or neighbouring organs. The length of time, also, during which the disease has often existed without causing much emaciation and general cachexia, will assist us in distinguishing the two affections. As regards the diagnosis of gastralgia from chronic gastritis, I do not know that the latter ever exists without more or less pain on making pressure upon the epigastrium, whilst the former is generally relieved by it. In chronic gastritis, too, the tongue, instead of being clean and red, exhibits either a thin white fur, or else a thick yellow one, or has a clean and baked appearance.

[The treatment will vary according to the nature of the attack, whether simple, or complicated with inflammatory action, or an atonic condition of the muscular fibre. Organic diseases of the stomach, as cancer or contraction of the pyloric orifice are frequently difficult to distinguish; the state of the patient's health during the intermissions, the absence of malignant disease of other organs, and the cause, will aid in the diagnosis. According to Mr. Barras, profuse hæmorrhage, low diet, and all causes which operate by debilitating the system, tend to produce neuralgic disease of the stomach, not cancer. He says also, that gastralgia does not pass into cancer, though inflammation does.

The treatment in simple cases comprises two heads; first, to relieve the present pain; and, secondly, to restore the healthy condition of the digestive functions.]

It has been a matter of much difference of opinion whether stimulants or narcotics are the most useful remedies for assuaging the anguish of neuralgic paroxysms. A great many patients are in the habit of using alcoholic liquors or aromatic infusions, and generally with considerable relief to the pain; whilst others, taught doubtless by their medical advisers, have recourse to hydrocyanic acid, opium, &c. For my own part, I feel confident that the application of rubefacients to the stomach, as a large mustard poultice, and of warmth to the surface of the body, and the feet especially, and at the same time the exhibition of a mild sedative, will be found to answer best. For the latter purpose, one grain of the extract of belladonna, made into a draught with two drops of hydrocyanic acid and an ounce of camphor mixture, will be a good formula. In slighter attacks, accompanied with liquid or flatulent eructations, half a grain of the extract, made into a pill with four grains of bismuth and a drop of essential oil of peppermint, to be repeated every four or six hours, I have found of great service.

To fulfil the second indication, viz., that of improving the general state of the digestive functions and strengthening the constitution, vegetable bitters, and mild preparations of iron, particularly the citrate, along with bismuth and rhubarb, may be had recourse to. Frictions and counter-irritation of the epigastric region, kept up for a length of time, are valuable auxiliaries, as are also out-door exercise and cheerful society.

From the analogy which may be supposed to exist between the condition of the gastric mucous membrane in obstinate and long-continued pyrosis, and the state of the mucous surface of the bladder and vagina in mucous discharges and leucorrhœa, various astringent metallic salts, which are found so useful in the latter disorders, have been applied to the cure of the former. These are the nitrate and iodide of silver; the sulphates of iron, copper, and zinc; the muriated tincture of iron; preparations of arsenic, &c.; and in many cases the exhibition of these remedies is attended with marked success. Great discrimination is, however, requisite to determine the exact cases likely to be benefited by them, as by inattention to this, much mischief has resulted from their continued use. In the adynamic state of the muscular fibre of the stomach and system generally, where neuralgic pains, with obstinate pyrosis, have existed for a great length of time, these remedies are the most useful; but before their exhibition, the tongue should be clean and the bowels unloaded.

In gastralgia, as in most other chronic affections of the stomach, the tris-nitrate of bismuth is the remedy from the use of which the the most satisfactory results will follow; and it is remarkable how speedily some of the more formidable symptoms yield to its power. In a case which has come under my observation within these few months past, and in which vomiting of a *clear fluid in the morning*, and of a dark grumous fluid, similar to that which is ejected in cancer of the stomach, *in the evening*, had persisted for several years, so much relief was obtained from the extract of belladonna combined with bismuth, that the vomiting of both fluids entirely ceased from the taking of the *first dose* of the medicine, and did not once return during the exhibition of the same remedy.

In those very numerous cases in which the symptoms of other derangement of the digestive powers complicate those of neuralgia, a more modified treatment will be necessary. If there be nausea and foul tongue, heat and tenderness of the epigastrium, or pain along the course of the small intestines during digestion, purgatives, mild mercurials, and topical bleeding will be often useful. In conducting the after-treatment, however, it will be of the first importance for us to determine what was the mode of invasion by which the disorder made its appearance, and whether the original starting-point was from an atonic and enfeebled condition of the organ, or from excessive irritation, or subacute inflammation.

Northern Journal of Medicine, Dec. 1844, *p.* 95.

23.—*On the Treatment of Malignant Sore Throat by Emetics.* By JAMES ARNOTT, M.D. [In a paper "On the present state of Therapeutical Inquiry," Dr. Arnott mentions a remedy for malignant sore throat, which, like the invaluable discovery of Jenner, was found out by accident at a time when an endemic and supposed contagious species of malignant sore throat (diphtherite ?) was very prevalent at St. Helena. A serjeant's wife had four children labouring under this affection, at the same time that she was suffering from some illness for which an emetic mixture had been prescribed]

It consisted of a strong solution of Tartrate of Antimony, a certain quantity of which was to be taken at intervals until vomiting should be excited. The poor woman, supposing that this mixture had been sent for one of her children, the last attacked with sore throat, not only administered it in the large doses intended for herself, but continued to exhibit it during the day so as to keep up a frequent and severe vomiting. I accompanied her medical attendant in his evening visit, when we found this child in a state of extreme exhaustion, but in all other respects much relieved. It rapidly recovered; and the practice of severe and continued vomiting was adopted during my stay on the island in many subsequent cases of the same disease, with equal success. The same method of treatment has, since the above occurrence, and perfectly independently of it, been resorted to in cases of croup by several practitioners who have recorded their success in the medical journals. In his recently published and excellent lectures, Dr. Watson speaks of it, in conjunction with bleeding, as preferable to any of the usual practices in this disease; and Dr. Cheyne strongly recommended similar treatment (to which he states he had also been led by accident) for what he terms the second stage of croup. I have learned also that severe and continued vomiting was employed by the medical officers of our army in Egypt to arrest the rapidly disorganizing ophthalmia which then prevailed; and it is manifestly applicable to other diseases of the same character, requiring the adoption of prompt and decided measures.

Medical Gazette, Jan. 10, 1845, *p.* 475.

24.—*Extract of Green Walnut Shells, in Chronic Congestion of the Tonsils.* By Dr. Becker. In the *Medicinishe Zeitung*, there is published, by Dr. Becker, a formula for a preparation, which he has employed successfully, in the case of a boy afflicted with congestion of the tonsils. The tumefaction had taken place many years previously, and was then so extensive, that speaking had become very difficult; and respiration often impossible during the night. Dr. Becker advised the following solution to be applied with a brush.—*Extract of green walnut shells*, 4 *grammes; distilled waters*, 60 *grammes. To mix and dissolve according to art.*

This was so prompt in its effects, that the congestion of the tonsils had disappeared before the whole of the solution had been used.—*Journal de Medicine*, January, 1845.

Lond. and Edin. Monthly Journal of Med. Science, March, 1845, *p* 238

25.—ON FRICTION VIBRATIONS IN PERITONITIS.

By Robert Spittal, M.D., F.R.S.E.

[The occurrence of friction indications in peritonitis was first noticed by M. Piorry, in his work—"De la Percussion," &c.; he remarks that it was Laennec's opinion, that in peritonitis a sound as of crumpling parchment could be heard.

M. Désprex thought that in the early periods, before effusion had occurred, this noise could be produced. In a case in which he had heard it, of recent peritonitis, which proved fatal, small osseous plates were found studding the inferior vena cava, by which no doubt the vibrations or sound had been produced.

Dr. Beatty published the first observations on the subject in this country, and to him succeeded Drs. Bright, Corrigan, and Stokes.

Dr. Spittal, from observations which he has made, draws the following conclusions:]

That the mechanism by which the friction vibrations are produced is of three kinds, viz.

1. The respiratory movements,—of the diaphragm chiefly,—but also the action of the abdominal muscles. The vibrations being synchronous with these movements, though sometimes only developed during inspiration.
2. Artificial movement of the parts by pressure with the hand or otherwise. The vibrations corresponding in their rhythm to the movement produced.
3. The peristaltic motion of the intestinal canal,—imparting to the vibrations a peculiar, continued rustling, and creeping character to the ear and hand, corresponding to the vermicular motion of the intestines.

That the immediate cause of the friction vibrations is the rubbing together of two peritoneal surfaces, physically altered by the inflammatory process; and although the effusion of lymph has been considered necessary for their production, it appears highly probable that at a prior stage of the inflammation, when the peritoneum is merely drier than usual, friction vibrations may take place.

That the more the surfaces are moistened, the less intense will be the friction vibrations; and when a liquid effusion is sufficient to separate the surfaces, the vibrations will cease altogether at the part; but by altering the position of the patient, so as to enable the liquid to gravitate to some other part, and thus bring the surfaces together again, the friction vibrations will be renewed

That the amount of motion between the inflamed surfaces, necessary for the production of the friction vibration, is very limited; and that different modes of friction, as to rapidity and degrees of pressure, may not only modify the intensity, but also the tone and quality of the vibrations.

That the present state of our knowledge does not permit us to connect any particular species of vibration with a certain physical condition of the peritoneum, although reasonable grounds exist for this expectation.

That although the friction vibrations are no evidence of the existence of adhesions between the peritoneal surfaces, it has not been proved, that in the case of partial adhesions,—and even when the adhesions are general, provided the effused lymph be recent, soft, and extensible,—an amount of motion sufficient to produce the friction vibrations might not occur.

That the respiratory abdominal friction vibrations are chiefly manifested at the upper part of the abdominal cavity, where its more solid contents are situated, and in the case of a large organic tumour,—and may be regarded as indicative of the inflammation existing over a solid organic tumour.

That the indications from artificial movement of the parts have been perceived, both where tumours were present, and where the intestines alone, or along with the omentum, were the site of the inflammation.

That the peristaltic friction vibrations indicate that the peritoneum investing the corresponding portion of the intestinal tube is the part effected.

That wherever the peristaltic vibrations are *very distinctly perceived*, they may be regarded as indicative of a lively and free motion of the folds of the intestine upon one another, and upon the parietes; and of few or no adhesions existing between them. At all events, it shows that the intestines are not generally adherent, nor matted together into an adherent mass, nor, to any great extent, adherent to the abdominal parietes.

That in cases of peritoneal inflammation in the upper portions of the abdomen simulating pleuritis the presence of *any degree* of the peristaltic friction vibration might very much assist us in the diagnosis.

Lond. and Edin. Monthly Journal of Med. Science, May, 1845, *p.* 345.

26.—*Use of Acids in some Affections of the Stomach.* By Dr. Chapman. [In Article 32, vol. X, we gave an account of the effect of vegetable acids, by Dr. Tracy, of Ohio, in relieving or curing particular affections of the stomach attended by acidity. This may seem to be a very unscientific mode of procedure, but the facts seem to corroborate the value of the practice in some cases. Dr. Chapman, of Philadelphia, has experienced relief from the same remedy, which seems much more commonly resorted to in America than in this part of the world. Dr. Chapman says:]

Constantly have we reports of the most discrepant sorts of nourishment agreeing with dyspeptics, partly to be referred to individual idiosyncrasies, though much more to the pathological state of the case. The late Professor Wistar informed me that he had for a long time ineffectually endeavoured to relieve an opulent merchant of this city, who was very speedily cured by drinking copiously of *sour beer*, such as had been utterly condemned by the brewers as spoilt and unsaleable. An eminent lawyer got well of a very inveterate attack, previously attended by the late Professors Rush and Physic, by living exclusively on raw turnips, and the latter was in the habit of relating another case where raw cabbage produced the same effect.

During nearly a whole winter I had under my care, in consultation, a most distressing attack of the disease, proving utterly intractable to the regular remedies, which the next summer promptly disappeared by the person subsisting on the *morilla or sour pie cherry.*

Nor is this the only instance of which I have heard of cures ascribed to tart, and perhaps unripe fruit of several kinds, and one especially from Professor Hodge, to apples.

Not many years ago, I saw with Professor Jackson, a gentleman from North Carolina, who, after baffling all our efforts, recovered on a diet of fat *roasted pork;* and a second with Dr. J. Rhea Barton, in an advanced stage of the affection, with a state of stomach so irritable that nothing we directed could be retained, which immediately yielded to *wheaten mush* and *vinegar* largely and eagerly consumed.

British and Foreign Medical Review, Jan., 1845, *p.* 29.

27.—*Treatment of Infantile Gastric Fever.* By Golding Bird, A.M., M.D. [The origin of gastric fever occurring amongst children is usually to be ascribed either to unhealthy ingesta or depraved secretions. The pulv. sodæ comp. * of Guy's Pharmacopœia, in doses of three to eight grains at night, and a full dose of the pulv. rhæi salin.† every morning for a week or so, will in most cases be found very successful treatment. To the latter compound, so well known to the profession for its almost specific power in these affections, Dr. Fordyce accorded this elaborate praise,—"Had I been more ambitious of dying a rich man, than of living an useful member of society, the powers of our anti-hectic powder in curing, as if by miracle, the hectic fever and the swelled bellies of children in this town would have remained a secret while I lived."]

Guy's Hospital Reports, April 1845, *p.* 118.

Remittent Fever. [The treatment in these cases, says Dr. G. Bird, is exceedingly simple. First, remove the hair, wash the body daily all over, and put the patient on low diet; and after clearing the bowels with hyd. c. cret., or ol. ricini, give sodæ sesquicarb. until the state of the secretions is corrected, quinine then given acts almost like magic, curing the patient generally in a week.]

Guy's Hospital Reports, April 1845, *p.* 116.

28.—*On the Treatment of Tænia by Pomegranate Bark.* Dr. Merat states that, when this substance is properly administered, it never fails; the mode he recommends is the following: "Whenever a patient has evacuated portions of tænia, he must take on the same, or the next day, a decoction of two ounces of fresh bark of the pomegranate root, in lb. iss. of water, reduced to lb. j., in three doses, leaving half-an-hour between each dose; the worm will constantly be evacuated at the utmost in twenty-four hours, and no relapse need be feared. The want of success is owing to the fact that sometimes the dry bark is employed, and sometimes it is adulterated with other kinds of bark; also, because it is taken too long after the portions of tænia have been expelled, or because the dose was too weak, or combined with purgatives, &c. In countries where the pomegranate is scarce, it may be replaced by the polypodium felix mas, in the dose, for the recent powder, of ʒij. to ʒj.; in this case, a purgative is necessary, whereas it is not requisite with the pomegranate bark.—*Revue Medicale.*

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* Sodæ Carbonatis exsiccatæ ʒ v. Hydrargyri Chloridi ʒ i. Pulv. Cretæ compositi ʒ x. m.

† Rhæi radicis pulv. ʒ i. Potassæ Sulphatis ʒ ij. m.

Medical Times, Jan. 11, 1845, *p.* 323.

29.—ON CONSTIPATION.

By Dr. Barlow, Physician to Guy's Hospital.

[In an obstinate case of constipation, our first question is to ask ourselves where the obstruction is, and what is the cause of it. This is often a difficult thing to decide. Dr. Barlow in his "Clinical Reports" relates some interesting cases in which the excretion from the kidneys would seem to throw some light on the situation of the obstruction. The first case was a man aged 26 years.]

He had an attack of constipation twelve years previously, which yielded to aperients in a few days. Eleven years subsequently he had a similar attack lasting six days, and removed by the long tube. Eight days before admission he had an evacuation, after which he was constipated, with a screwing pain in the epigastrium. On admission, the countenance was anxious—tongue moist—pulse small, 85—abdomen much distended by flatus—track of colon resonant on percussion—no sickness—urinates freely. Five grains of calomel and one of opium statim—castor oil two hours afterwards—warm bath, which gave temporary relief to pain—assafœtida glysters returned, with very little fæculent matter. 9th. Much the same—bath repeated, and whilst there, the flexible tube, to the extent of 18 inches, was introduced, passing through fæcal matter, and giving vent to some flatus. No action of bowels. Four grains of colocynth with one of hyosciamus, every hour 10th. No relief being obtained, six grains of calomel with one of opium. The long tube again, to 23 inches, and a quart of warm water injected. Some air and slightly tinged water returned—solution of five grains of tartarized antimony in three ounces of water thrown into the rectum. 11th. The pain recurring in paroxysms—warm bath—warm water copiously injected—returned merely tinged. Twelve grains of calomel followed by castor-oil, repeated in three hours. Same evening, the pain and distention increased—countenance more anxious—pulse full and quick—tongue furred. Tube again introduced 23 inches—large discharge of flatus, and, after injection of warm water, a discharge of green fæcal matter, followed by softness of abdomen and disposition to sleep. 12th. Re-accumulation of air—no more fæces. Nine grains of Barbadoes aloes every three hours—abdomen rubbed with croton oil—tube introduced in the evening, followed by discharge of fluid fæces and air—turpentine enema. 13th, evening.

Dusky countenance—jactitation—much pain in the loins—great distention—nausea—hiccup. One pound of crude mercury exhibited, with cessation of hiccup and nausea, and less distention—no evacuation. 14th. Dr. Addison in consultation. Venesection to syncope, with a minim and a half of croton oil. Blood firmly coagulated, but not buffed—much improved after bleeding—stomach irritated by the croton oil—passed some fragments of fæcal matter with much straining—green fæcal fluid drawn off by the tube—a grain of calomel with one of opium every four hours. 15th. The bowels washed out by the tube—discharge of green fluid fæces. Colocynth and hyosciamus pills every four or six hours—turpentine enema in the evening—calomel and opium at bed-time.

16th. Much the same, and in consultation with Mr. Cooper, as to an operation, it was determined to wait another day, before opening the colon from the loins, Calomel and opium every three hours—larger discharge than hitherto of fæcal matter by the tube.

17th. Passed this morning, two pints of dirty green fæcal matter, well tinged with bile. He seemed better for a time, but gradually sank on the 19th, with symptoms of ruptured bowel.

On opening the body, the abdomen was found to be almost filled by an enormously-distended, thickened, and hypertrophic sigmoid flexure, which had been twice turned on its axis. The descending colon, where it became continuous with this distended sigmoid flexure, passed in front of the rectum. Just above this portion of the colon there was ulceration of the mucous membrane, and in one place perforation of the intestine. The sigmoid colon had a twisted root, with a contracted mesentery; it crossed to the right, and suddenly back again: the upper part seemed the largest, but the whole resembled the stomach of a great turtle with a thickened and inflamed mesentery. The rectum was wide and pale; but immediately above the part where the intestine passed behind the descending colon, dilatation with thickening rapidly commenced. There was great muscular hypertrophy of the sigmoid flexure, and a firm, thick lining, in part diphtheritic. There were no ulcers in this part. The transverse and descending colon were much dilated, tumid, and inflamed, diphtheritic and sloughing, with numerous ulcers: one of them had perforated the intestine just above the commencement of the sigmoid flexure. The small intestines were full and inflamed, and feebly glued together in parts with whitish soft fibrine: there was, besides, extensive recent peritonitis.

The liver, spleen, and kidneys were healthy.

The left colon was, after death, easily opened through the abdominal walls from behind.

Case 2.—Joseph H——, aged 12 years, admitted 30th March, 1844, employed as a servant at a zinc and scuttle-maker's, Newington, for four months past. Had had an attack of colic and constipation, fourteen months previously, which was soon relieved by purgatives. Some similar attacks occurred afterwards. On the 24th March, was suddenly seized with severe pain in the abdomen, succeeded by violent retching, which continued all night, and next day Mr. Otway saw him, and prescribed various remedies, without effect. For six days before entering the hospital he passed neither fæces nor urine. The surface was now cold and pallid—face congested—expression anxious—eyes sunken—and the whole aspect indicative of serious mischief. There was tendency to stupor—voice feeble—tongue clean and dry—no blue line on the gums—no great distention of abdomen nor tenderness on pressure—no urine for five days (it was stated six days just before)—he sunk and died on the 1st of April.

Post-mortem, 24 *hours after death — Chest.* The lungs were rather watery, and somewhat mottled with red spots and very slight fleshiness.

Abdomen.—On the surface of the peritoneum were scanty fibrinous deposit, redness, and discolouration, with slight cellular adhesions. The stomach was dilated with gas, and contained dark bilious fluid. About four turns of the upper part of the jejunum were widely distended, dark, and rather thickened; the three lower of them the most sound. At the end of this portion was a distinct, thick, soft, circular cord, of rather recent cellular membrane, obstructing the gut, but adhering to it loosely at most parts; a large probe passed easily under the cord: the beginning of the chief dilatation in the duodenum was also bound to it, as also an intermediate portion. When laid open, the bowel seemed remarkably free. The whole contained fluid fæces. Liver rather tumid. Kidneys full and soft. Pancreas red.

1. In the first case there was little or no abdominal pain at the commencement: in the second it was one of the earliest symptoms.
2. In the first case there was no sickness till a very late period: in the second it was urgent from the beginning.
3. In the first case there was great flatulent distention of the abdomen: in the second there was none.
4. In the first the urine was abundant in quantity: in the second there was an almost entire suppression of that secretion.
5. In the first case the circulation was well maintained in the extremities, until the symptoms of perforation manifested themselves: in the second there was early collapse.

The contrast between these two cases in the quantity of the urinary secretion is so remarkable, as almost at once to lead to the belief that it was the necessary result of the difference in the seat or nature of the obstruction; a belief which is strengthened by the fact, that in Case 2, the suppression of urine came on at the same time with other symptoms And, further, in cases of this nature, where no fluids can pass into the alimentary canal, and where, in consequence, none can be absorbed, we should be led to expect, *à priori*, that the urine would be very little in quantity. We have, then, rational grounds for believing, that, in cases of constipation where the urine is very deficient in quantity, the obstruction is probably at the upper part of the canal; and that where it is abundant, at the lower.

In the preceding observations considerable stress has been laid upon the quantity of the urinary secretion, as a diagnostic sign of the situation of the obstruction in cases of constipation: for it seems that where there existed a perfect obstruction in the upper part of the small intestines, there was almost a total suppression of urine; where there was a diminution of the calibre of the canal in the same situation the urine was diminished in quantity; and where the small intestines were free, and the obstruction was seated in the colon, the urine was very abundant. If, then, we regard this statement of facts merely in a diagnostic point of view, as aiding us in determining the probable seat of obstruction in the alimentary canal, it will not be without its use; for every symptom must now be considered important which can help us to decide a question, the answer to which will go far towards determining the expediency of endeavouring to relieve an insurmountable obstruction by surgical operation.

It is not, however, merely in regard to this diagnostic significance in this or that disease that we are to regard a circumstance that meets us under so many different, and even opposite conditions of the system; when the skin is dry and parched, and when there is excessive perspiration;—in profuse diarrhœa, and in insurmountable constipation;—in disease of the arteries, as well as of the veins;—of the lungs, as well as of the heart;—of the liver, as well as of the kidneys. The occurrence of this single point of resemblance in conditions of the system often diametrically opposite, is a fact too remarkable to be passed over, and is one, the further investigation of which may possibly throw some light upon the circumstances which determine the quantity of the urinary secretion, and afford some assistance in directing our efforts to regulate it.

The sources whence the urine is derived are now, I believe, acknowledged by most physiologists to be three. 1. The water taken into the alimentary canal with the ingesta. 2. Those soluble substances which are taken in the same way, and which do not undergo decomposition in passing through the extreme circulation of, *e. g.* the neutral salts of metallic bases with mineral acids, which appear to act as stimulants to the kidneys. 3. Those lower organic products which are formed in the extreme circulation, or, in the phraseology of Liebig, the products of the transformation of tissues; *e. g. urea*, *urates*, *&c.* In order, then, to the due secretion of urine, the following conditions are essential:—An absorption of a sufficient quantity of water from the ingesta to hold the salts, the decomposed soluble matters, and the products of the transformation of tissues, in solution: the free transit of this water and soluble matters through the portal veins, the liver, the right side of the heart, the lungs, and the left heart, to the kidneys: a healthy condition of the extreme circulation, whereby the normal product of the transformation of tissues may be duly formed: a condition of the kidneys adequate to carrying all these matters out of the system when applied to them by the blood. If, therefore, any one of these conditions be vitiated by disease, the secretion of urine will be impeded, either as regards its quantity or the proportion of the solid contents.

Medico-Chirurgical Review, Jan., 1845, *p.* 70.

[On this subject, Dr. Chapman, of Philadelphia, makes the following remark on the use of colchicum:]

From ten drops of the radical tincture of colchicum, repeated several times in the twenty-four hours, and persisted in for some time, as much may be anticipated with a view merely to the restoration of the lost susceptibility of the bowels, as from anything else within my experience, rarely, indeed, having seen it to fail. It is essential, however, to its success, that the dose be small, and this is a precept to be observed in relation to all medicines in this form of constipation. The object being attained rather by gradual insinuation than by forcible impression.

The laxatives from which Dr. Chapman has observed advantage are, extract of the butternut (juglans cinerea,) the bile of the ox, brimstone with muriate of soda, and the sulphate of soda and magnesia in a considerable quantity of warm water, but his favorite remedy is the *peristaltic persuaders*:—℞ Rhei ʒj; Ipecac. gr x; Ol. carui. gr. x; Acacia q. s. Ft. pil. xx; cap. ij o. n.

British and Foreign Medical Review, Jan., 1845, *p.* 31.

30.—*On the Membranous Sheds formed by the Intestinal Mucous Membrane.* By Mr. Iliff, Newington Butts. Mr. Iliff, of Newngton Butts, read a paper, in which he brought before the notice of the Physical Society of Guy's Hospital, the consideration of those membranous-like formations which are not unfrequently passed by patients mingled with their alvine evacuations. He regarded the mucous membrane of any part of the intestinal canal from the duodenum to the sigmoid flexure of the colon, as capable of originating them when exposed to adequate causes of irritation. Their exact nature he would not take upon himself to decide.

This peculiar disease of the intestine, according to his observations, occurred most frequently in women, had always been preceded by dyspeptic symptoms, often of long continuance, and was best combated by undeviating attention to diet, soothing measures, light tonics and light astringents, as Liq. Potassæ and Balsam Copaiba, and the careful employment of only the mildest aperients. He read the particulars of eight or nine cases which had come under his care, all of which, save one, the subject of malignant disease of the os uteri, and another which had passed from his care, had regained and preserved a tolerably good state of health,

The essential dependence of these membranous formations on preceding irritation or inflammation—the degree of the latter, and its acute or chronic character—the modification of these membraniform products by respective peculiarities in the minute anatomy of the respiratory or intestinal membrane from which they derive their origin—and the probability of their being the result of two different conditions of the mucous membrane; the one, irritation, producing a mere thickened epithelial coat of the tube, as in the so-called cases of bronchial polypus, while the other was a real inflammation, attended with effusion of fibrine, as in croup, formed the most interesting topics of debate.

[Mr. Iliff mentioned having lately examined the morbid structure thrown off in membranous menstruation, and stated that he had found it to be of epithelial formation.]

Medical Gazette, Dec. 20, 1844, *p.* 391.

31.—*Peritonitis the Result of Contusion.* By THOMAS BENNET, Esq., Hailsham, Sussex. A boy, aged ten years, was returning with his father from the sea-shore with a load of beach weighing between two and three tons. He had been riding some time on the waggon, and when he attempted to get down, he fell from the shafts immediately before the wheel, which was in the act of passing over his body, when his father, who was walking by the side of the horses, perceived by the strain made by them, that they were pulling against some obstacle, he turned round, and saw his child actually under the fore-wheel. The poor fellow, in his fright, for the moment hesitated whether he should back the wheel or move on: he decided, however, on the latter, and so the wheel passed over the body of the boy, crossing the middle of the abdomen. On snatching him up, he found, as he says, "the boy alive, but not able to stand," and that a large quantity of fæces had been squeezed from the bowels "per rectum."

As this accident occurred away from any dwelling, the boy was put on the waggon and driven home, which he did not reach for two hours. When I saw him, I found him in a state of partial collapse, and upon hearing what had occurred, expected, of course, to find some grave injury—such as fractured pelvis, or serious mischief done to the vertebral column; but no trace of injury could I find anywhere—not even any mark on the abdomen, although it was excessively tender to the touch over its whole surface. The boy was put to bed, and proper means were employed to promote re-action and subdue its violence. He passed a restless night, and next morning I found that severe peritoneal inflammation had supervened; but by the application of the usual treatment, of leeches, &c., this was readily overcome. The bowels were unacted upon for three days after the accident. They yielded, however, to a repeated dose of castor oil; and from that time to this the little patient rapidly convalesced—so that now, about ten days since its occurrence, he is as well as ever.

Lancet, March 22*nd*, 1845, *p.* 324.

32.—*On Hepatalgia and its Treatment.* By R. H. ALLNATT, M.D., A.M., F.S.A. Andral has introduced the following observations in his "Clinique Médicale." "We sometimes," he says, "observe in the region of the liver severe pain, which cannot be accounted for, after death, by any lesion of the viscus or its excretory ducts. These are cases of hepatalgia, or hepatic colic. The circumstance just mentioned, and, moreover, the nature of the pains, their intermission, and the state of good health which oftens exists in the intervals, all lead us to believe that the pains have their site in the numerous nervous filaments which are distributed to the liver, and which are derived either from the pneumogastric or the great sympathetic."

This is at once a condensed and correct description of the seat and nature of the affection. It will be observed that it is essentially a nervous disorder, and it differs, of course, in all important points from inflammation. The diagnostic symptoms are well marked, and are peculiarly important, inasmuch as the practice which is founded on them requires to be diametrically opposite to that which we are called upon to pursue in cases of inflammation.

Although the pains accompanying hepatalgia may be as intense as those of hepatitis, and, in many instances, perhaps more urgent, they are not constant, but are at the outset, and frequently also during the whole progress of the disorder, paroxysmal, affording in the interval, a complete immunity from pain. The pathognomonic signs indicative of inflammatory action of the liver, are pyrexia, tumefaction, great tenderness in the hypochondrium, frequent and strong pulse, thirst, furred tongue, and vomiting, sometimes of a bilious, and, at other times, of a dark-coloured secretion, as the substance of the liver more or less partakes of the invading disease. The bowels are irregular in their action, the evacuations presenting a great variety of appearances, according as the biliary secretion is more or less affected; and the urine is scanty and high coloured. In hepatalgia, on the contrary, these signs are invariably wanting; there may exist, indeed, constant pain and tenderness over the region of the liver, increased to a certain degree by pressure, but manifest exacerbations, even in the worst cases, occur, which are sufficiently indicative of its paroxysmal character. The functions of the organ may proceed uninterruptedly as in its healthy condition. The tongue may be quite clean, or sometimes, in the centre, there may be a gentle creamy fur, and the urine is generally increased in quantity, and is of a lighter colour than ordinary: this I have found a characteristic symptom of many nervous disorders.

We have been contemplating the leading features of hepatalgia in its pure uncomplicated state, but it is comparatively rare that we meet with this condition, as it is generally associated with other decided manifestations of the neuralgic diathesis.

The treatment of hepatic colic, whether in its isolated or complicated form, is very simple, and merely requires the combinations which are found to be effectual in other cases of neuralgia. Mercury, as in tic douloureux, heightens the affection, increases the general irritability, and renders the system universally more obnoxious to the incursions of the morbid nervous sensibility. Carbonate of iron—the rage of the day—is, if possible, even more destructively pernicious; and I would ask, if my assertions be correct of the dependencies of the disorder (and they may easily be put to the test,) whether or not the action of a powerful tonic is likely to prove beneficial in any one of its earlier stages? Yes, it has been administered with reckless daring in all the phases and all the complications of neuralgia. Gentle purgatives, combined with colchicum, ipecacuanha, and hyoscyamus, will seldom fail to work a speedy cure: and if the constitution have suffered from protracted unmitigated pain, alkaline vegetable tonics will effect that which we might in vain expect from the rough insoluble mineral preparations.

Medical Gazette, March 21, 1845, *p.* 796.

33.—*On Acute Hepatitis.* By Sir GEO. BALLINGALL. With a view to obviate suppuration, and to promote the resolution of inflammation, blood-letting, both general and topical, is our chief resource; but, in addition to this, mercury has been long held to possess something like a specific influence in resolving inflammatory affections of the liver, and to its efficacy in such cases I can bear personal testimony. I am at the same time persuaded, that, from the high repute which this medicine enjoys, it has in some instances, particularly of the acute disease, been too exclusively trusted to. Practitioners seem now, however, to be generally aware, that, in patients of robust constitutions and sanguineous habits, full mercurial action is not easily induced until the tone of the system is lowered by bleeding and other evacuations. It therefore behoves us to remember, that, while bleeding in acute hepatitis cannot be too promptly resorted to, the exhibition of mercury may perhaps be deferred, without any ultimate disadvantage. It was common, in my time, in India, to look upon blood-letting as an evacuation which it was upon all occasions desirable to avoid, but this was a sentiment in which I never permitted myself to indulge; and in the regiment in which I had the honour to serve, an opposite practice was gradually established, both in fever and hepatitis, where something peculiar in the patient's habit or circumstances did not forbid it. In hepatitis, I have frequently observed, that when doubt or hesitation existed on the part of the practitioner, when half measures were adopted, and the early stage of the disease thereby neglected, it became extremely difficult of cure, apt to degenerate into a chronic form, and to become a troublesome companion for life. Under the apprehension of such a result, I have employed blood-letting to a larger extent than what the state of the pulse, the height of the symptoms, or the habit of the patient would seem to demand, and of such practice I have never had occasion to repent. I do not, however, mean to allege, that bleeding will altogether supersede the necessity of mercury, but that in the acute form these should at least go hand in hand, and that the latter should be pushed to the extent of producing ptyalism with the least possible delay. In the chronic form of the disease, it is to mercury we must chiefly trust for the re-establishment of a healthy action in the liver, and the restoration of healthy secretions. The relief experienced, in many cases of chronic hepatitis, so soon as the mercury affects the mouth, is truly surprising; the removal of all uneasy feelings from the side, the comparative clearness of the patient's skin and visage, the return of natural evacuations, and the removal of every complaint but debility, abundantly evince the powers of this remedy.

In either form of hepatitis, smart and habitual purging will materially promote the objects we have in view; and, in this instance, the preference so generally given to calomel in India, is, I believe, well founded.

Lond. and Edin. Monthly Journal of Medical Science, Dec. 1844, *p.* 1040.

34.—ON COMPRESSION OF THE RENAL VESSELS AS A CAUSE OF ALBUMINURIA.

By George Robinson, Esq.

[We referred to the principle facts contained in this paper of Mr. Robinson in Retrospect, vol. X, p. 88 and 279, but did not enter into detail respecting this interesting communication. Mr. Robinson undertook some experiments to ascertain the cause of the appearance of albumen in the urine, and found that not only liquid albumen and blood, but coagulating lymph or fibrine also escaped into the urinary passages, "as the consequence of an obstruction to the return of blood through the renal vein." His experiment may also explain the true reason of the variable nature of the effusion in different instances.]

My reasons, says Mr. Robinson, for selecting the kidney were the following:—

This organ can be readily and quickly exposed in the lower animals, and its artery, vein, and duct, (which constitute almost the sole bonds of union between it and the rest of the body,) may be separately secured by ligature: so that we not only have the circulation through the gland entirely under our command, but are, at the same time, enabled to isolate and confine the secretion, and thus prevent the possibility of error in examining the composition of the latter. Moreover, the recent discoveries of my friend, Mr. Bowman, by clearing away the mystery which had previously surrounded the Malpighian bodies, have made us well acquainted with the minute anatomy of the kidney, and have thereby enabled us more clearly to understand the mechanism of the process.

Having obtained all that I expected from obstructing the return of blood through the renal vein, I was anxious to ascertain the effect of directing, with different degrees of rapidity, an increased flow of blood to the vessels of an organ previously healthy: the passage of this blood being unimpeded by any artificial obstacle, and the organ itself being untouched. After some unsatisfactory trials, I at length obtained results precisely similar to those met with in the former series after venous obstruction.

Although the same general effects were produced in all the experiments, it will be more advantageous to consider them as arranged under two divisions.

The first, containing twenty experiments, in all of which some impediment obstructed the flow of blood through the vein.

The second, comprising fourteen experiments, in which an increased determination of blood was directed to one or both kidneys, without any artificial obstacle being opposed to its free return.

After the experiments on the kidneys were performed, it occurred to me, that the observation of the effects of venous obstruction in the vessels of a frog's foot might serve to illustrate the action of the same cause in the former cases.

Accordingly, the hinder extremity of a frog was so included within two ligatures that the artery and bone were the only parts left free. There was some slight oozing of serous fluid from the wound in the ham, and the limb below the ligature speedily became red and swollen. On looking at the vessels in the web with a moderate magnifying power, the veins were seen to be much enlarged, and, as it were, prolonged into the capillaries in consequence of the accumulation of blood in, and distention of, the latter.

At first sight, the blood appeared to have lost all motion; but on examining more attentively, some small arteries were observed in the act of pouring in fresh blood; the impulse of which propelled onwards the column in the veins at each contraction of the heart. During the cessation of that action a retrograde movement occurred: the two alternate actions causing an oscillation of the contained blood.

At the end of half an hour the globules had begun to adhere, and formed by their union irregular masses and cylindrical columns, which moved to and fro synchronously with the contraction and relaxation of the ventricle; the former motion being evidently produced by the momentum of the arterial blood, the latter resulting from the resiliency of the elastic tissues.

At the end of seven hours the blood was completely stagnant in all the vessels.

At some points slight extravasation had apparently taken place, for the red outline of the vessels was irregular and ragged. In other places the red line marking their breadth was uniform and even; but a white line of opacity (not unlike that caused in transparent tissues by the effusion of lymph) was situated externally to it.

Various stimulants were then applied to the web without producing any distinct effect either on the vessels or on the blood which they contained. The limb never recovered its vitality, and subsequently underwent the various changes of mortification.

As these effects were such as might have been expected from previous reasoning, and as they were precisely analogous to those which I presumed to occur in the minute vessels of the kidney during the existence of an obstruction to the circulation of the blood through them, I did not think it necessary to repeat the observation.

[Mr. Robinson's first class of experiments are to illustrate the effects of more or less obstruction of the renal vein. In the first seven experiments a ligature was tightly applied to this vein, no hemorrhage occurring from any of its branches. In one case the urine was examined in six minutes and found to be very highly albuminous with some slight appearance of fibrine, while in another case, after an hour's compression of the vein, the urine appears to have been only bloody. In four of the seven cases, however, the urine contained more or less albumen. Mr. Robinson says:]

These experiments alone suffice to show that the same kind of effusion does not necessarily and constantly result from the existence of the same degree of obstruction. It will be evident that this latter constitutes but one of the conditions required to cause exudation of the more viscid portion of the blood through the coats of its containing vessels. A certain amount of impulse of the arterial blood must always co-exist and co-operate with the obstruction, before that species of effusion can take place. The activity of this force will of course be proportioned to the rapidity and vigour of the ventricular contractions; and it is to the varied power of the heart's action, at the moment of applying the ligature, that I ascribe the different results met with in the above experiments. I have throughout invariably observed that the effects of an intense degree of compression were chiefly to be expected in those instances where the animal seemed to recover most speedily from the shock of the operation.

[In the second set of experiments the obstruction of the renal vein was either incomplete or gradually effected. The interval between the application of obstruction and death of the animal varied from one hour to four and a half days, and the urine was albuminous in six out of twelve cases—varying, however, considerably in quantity. In the second class of experiments Mr. Robinson increased the determination of blood to one or both kidneys without employing any compression of the vein. This he accomplished either by removing one kidney or by tying the aorta below the origin of the renal arteries. The last mentioned was the most successful, and in four experiments the urine contained more or less albumen. Mr. Robinson considers that his experiments prove:]

1. That simple compression of the blood in its smaller vessels will, in a direct ratio to the degree of intensity of that compression, cause the exudation of an albuminous fluid, of coagulating lymph, or the extravasation of blood. Its immediate effects, therefore, precisely resemble those of inflammation: and as it is well ascertained that both the essential causes of undue compression (viz., an obstruction or impediment to the flow of blood through the vessels of the inflamed part, and excessive action of the heart) co-exist in that disease, it seems but reasonable to infer that the primary effects of inflammation, being identical with those of undue compression of the blood, are the mere consequences of that physical cause.

2. That there is no relation between the composition of the effused matters and the extent of the dilatation of the coats of the vessels, as measured by the quantity of blood they contain.

In conclusion, I may again repeat my opinion, that the process of the effusion of albumen and lymph through the coats of the vessels of the living body is dependent on, and regulated by the degree of the compression of the blood contained within those vessels.

My chief object in undertaking this investigation was to endeavaur to extend the application of ordinary physical laws to the explanation of some of the morbid and healthy phenomena of the animal body: for it seemed to me that if a few simple general principles could be established, we might then hope to understand more clearly the true nature of disease, and perhaps ultimately be enabled to treat it with greater success.

Medico-Chirurgical Transactions, vol. 26, p. 51.

35.—ON URINARY DEPOSITS AND TREATMENT.

By Golding Bird, A.M., M.D., &c. &c.

Urine without any visible deposit.—A piece of litmus paper should be immersed in the urine, which, if acid, will change the blue colour of the paper to red. Should no change occur, a piece of reddened litmus paper must be dipped in, and if the secretion be alkaline, its blue colour will be restored; but if no change occur, the urine is neutral.

Some of the urine should then be gently heated in a polished metallic spoon over a candle, or what is preferable, in a test-tube over a spirit-lamp, and if a white deposit occurs, albumen or earthy phosphates are present; the former, if a drop of nitric acid does not re-dissolve the deposit, the latter if it does.

If the urine be very highly coloured, and undergoes no change by boiling, the colouring matters of bile, BLOOD, or purpurine are present. To determine which, pour a thin layer of urine on the back of a white plate, and allow a few drops of nitric acid to fall in the centre; an immediate and rapidly ending play of colours, from green to red, will occur if bile, but no such change if purpurine alone exists. Should the highly-coloured urine alter in colour or transparency by heat, the presence of blood must be suspected.

If the addition of nitric acid to deep red urine, unaffected by heat, produces a brown deposit, an excess of uric acid exists. If the urine be pale, immerse the gravimeter, and if the specific gravity be below 1.012, an excess of water exists in the urine, but if above 1.025, the presence of sugar, or excess of urea is indicated. To determine which, place a few drops in a watch-glass, add an equal quantity of nitric acid, and allow the glass to float on some cold water; crystallisation of nitrate of urea will occur in two or three minutes, if the latter exists in excess. Should this change not occur, the urine must be examined specially for sugar, which, it must be remembered, may exist in small quantities, without raising the specific gravity of the fluid.

Should the urine be alkaline, add a drop of nitric acid; if a white deposit occurs, albumen is present; if brisk effervesence follows the addition of the acid, the urea has been converted into carbonate of ammonia.

Urine depositing a visible sediment.—If the deposit is flocculent, easily diffused on agitation, and scanty, not disappearing on the addition of nitric acid, it is chiefly made up of healthy mucus, epithelium, or in women, an admixture of leucorrhœal discharge.

If the deposit is ropy and apparently viscid, add a drop of nitric acid; if it wholly or partly dissolves, it is composed of phosphates, if but slightly affected, of mucus. If the deposit falls like a creamy layer to the bottom of the vessel, the supernatant urine being coagulable by heat, it consists of pus.

If the deposit is white, it consists of urate of ammonia, phosphates, or cystine; the first disappears on heating the urine, the second on the addition of a drop of diluted nitric acid, whilst the third dissolves in ammonia, and the urine generally evolves an odour of sweet-briar.

If the deposit be coloured, it consists of red particles of blood, uric acid, or urate of ammonia, stained with purpurine. If the first, the urine becomes opake by heat; if the second, the deposit is in visible crystals; if the third, the deposit is amorphous, and dissolves on heating the fluid.

Oxalate of lime is often present diffused through urine, without forming a visible deposit; if this be suspected, a drop of the urine examined microscopically will detect the characteristic crystals.

Much of the little time required for the investigation thus sketched out, may be saved by remembering the following facts:—

If the deposit be white, and the urine acid, it in the great majority of cases consists of urate of ammonia; but should it not disappear by heat, it is phosphatic.

If a deposit be of any colour inclining to yellow, drab, pink, or red, it is almost sure to be urate of ammonia, unless visibly crystalline, in which case it consists of uric acid.

The only apparatus and re-agents required for these investigations at the bedside are—

A gravimeter, made small enough to float in an ounce of fluid.
Red and blue litmus paper.
A test-tube and watch-glass.
Nitric acid.

All these are readily arranged in a little case, and can thus be always at the convenience of the practitioner. For the microscopic examination of the urine, a vertical instrument on a firm-tripod stand, and large ring-stage, provided with a good half-inch achromatic object-glass, is alone required.

The following table briefly points out the best mode for the analytical examination of saline deposits, either by chemical tests or the microscope. The latter mode of investigation is infinitely preferable to all others, both for accuracy and economy of time, but is of course not readily available in the sick-room.

A Table for discovering the nature of saline deposits by chemical re-agents.

1.	Deposit, white	2.
	—— coloured	5.
2.	—— dissolves by heat . .	Urate of ammonia.
	—— insoluble by heat . .	3.
3.	—— soluble in liquor ammoniæ	Cystine.
	—— insoluble in . . .	4.
4.	—— soluble in acetic acid .	Earthy phosphates.
	—— insoluble	Oxalate of lime.
5.	—— visibly crystalline . .	Uric acid,
	—— amorphous . . .	6.
6.	—— readily soluble by heat .	Urates.
	—— slowly dissolves by heat .	——— stained by purpurine.

Table for determining the nature of saline deposits by the microscope.

1.	Deposit, white	2.
	—— coloured	5.
2.	—— an amorphous powder .	Insoluble by heat—Phosphate of lime. Soluble by heat—Urate of ammonia.
	—— in defined crystals . .	3.
3.	—— in prismatic crystals .	Triple phosphate.
	—— in octohedral or tubular crystals	4.
4.	—— in octohedra . . .	Oxalate of lime.
	—— in simple or compound tables	Cystine.
5.	—— in transparent crystals .	Uric acid.
	—— amorphous, or in spherical masses	Urates of ammonia or soda.

[There is one error in these directions, pointed out by Dr. James Johnson, viz., where Dr, Bird says that "if the urine be very highly-coloured, and undergoes no change by boiling, the colouring matters of bile, *blood*, or purpurine are present;" for it is well known that both the colour and transparency of bloody urine are changed by heat. Dr. Johnson also points out that the headings of these tables are not quite correct, as neither uric acid nor cystine can strictly be called "saline" substances.

On the Medical Treatment of the different Forms of Uric Acid Gravel, Dr. Bird observes, that]

Discarding altogether the existence of any specific agent for a disease which is rather symptomatic of another affection than really idiopathic, the therapeutical agents may be briefly referred to the following heads.

1. *Attention to the function of the skin.*—The remarks already made on the effect of an arrest of perspiration furnishing a pabulum for the formation of a deposit, or by retaining in the circulation a substance capable of rendering uric acid insoluble, show the necessity of attending to this indication. I have repeatedly seen diaphoretics, warm clothing, the use of a flannel, and in winter, even a chamois-leather waistcoat, with friction by means of a flesh-brush or hair-glove, repeatedly remove a deposit of uric acid gravel, and in more than one instance, where even an hereditary taint existed from gouty or calculous progenitors.

My own experience induces me to regard the warm, or still better, the vapour bath, as the most valuable diaphoretic. The latter is readily employed in private practice by means of the very convenient and portable apparatus of M. Duval, which has for a long time superseded other forms of vapour-bath at Guy's Hospital. Actual diaphoresis is by no means necessary in the treatment of all cases of uric gravel; friction to the skin, and when persons are sufficiently robust, immersion in the cold-bath, followed by rubbing the surface of the body with a dry and rough towel, until reaction is produced, is often of great service.

Restoring the tone of the organs of digestion.—By effecting this, a double object is attained; the perfection of the primary assimilation of the food by which the entrance of a crude nitrogenised matter, capable of being converted into uric acid, into the blood is prevented, and the prevention of the generation of any acid, the product of unhealthy digestion, which might be absorbed by the lacteals, and act as a precipitant of uric acid. This part of the treatment of calculous affections must be modified by the peculiarities of the case, and indeed is identical with that of the different forms of dyspepsia. Careful attention to the bowels, avoiding excessive purging, the use of minute doses of mercury, as of a grain of pil. hydrargyri or hydrarg. c, creta, with thrice that quantity of ext. conii, administered two or three times a-day, with moderate doses of the carbonates of potassa or soda in the mist. gentianæ comp., if constipation exists, or in inf. calumbæ, or what is far better, from its action on the skin, inf. serpentariæ, will often effect immense relief. Where gastrodynia, with or without pyrosis, exists, the use of half a grain of argenti nitras, or one of argenti oxydum, immediately before a meal, will often check alike the gastric and renal symptoms. But the most important element in the treatment is a rigid attention to the quality and quantity of the ingesta, taking the utmost care to select those articles of diet which the patient can best digest, it being of far greater importance, in the majority of cases, to regard this, than to choose articles of food according to their chemical composition. A too bulky meal of animal or vegetable food is injurious to persons labouring under calculous dyspepsia, for whilst the former supplies too much nitrogen, both will become sources of mischief by overloading the digestive functions, and preventing the chylopoietic viscera doing their duty. In protracted cases, however, much good is derived by actually cutting off part of the supply of nitrogen. In this way I have seen a copious deposit of uric acid gravel disappear, after other measures had failed to give relief.

Moderate muscular exertion, and a due amount of exercise is quite essential in the treatment of this disease; for not only do they call into play some very important functions, but often improve the general health. Besides this, when the stomach is imperfectly able to digest nitrogenised food, exercise will often aid its assimilation by making a call upon the chylopoietic organ for supply for the want of tissue it produces.

Among the remedies which appear most successful when the food is not converted into healthy chyle, and an unhealthy state of the blood from the presence of imperfectly assimilated matters results, the preparations of iron deserve notice. I have repeatedly seen copious deposits of uric acid in persons of low power completely disappear *pari passu* with the cure of the pseudo-chlorotic symptoms present, by the use of this important drug. The best mode of administering it, is in combination with a vegetable acid, as the stomach bears it well in this form, and it is probably more likely to enter the circulation. From six to twelve grains of the ammonio-citrate or ammonio-tartrate of iron taken thrice a-day immediately after a meal in a glass of water, have been most successful. The solution of the sesqui-acetate of iron is also a very valuable preparation, but is often inconvenient to prescribe, in consequence of its not being of constant strength.

[Dr. Bird then proceeds to notice remedies which act as solvents of uric acid; and successively passes under review alkalies and their carbonates, biborate and phosphate of soda, benzoic and cinnamic acid.]

As the alkaline urates are far more soluble than the free acid, the employment of soda and potass with their carbonates has been long used in the treatment of uric gravel. They moreover exert a beneficial effect in neutralizing any free acid in the primæ viæ, and thus preventing a precipitant of uric acid reaching the kidneys. The liquor potassæ may be employed in doses of half a drachm thrice a-day: it is best taken about half an hour after a meal, and may be conveniently administered in a little bitter ale, which conceals much of its disagreeable flavour, or in any bland vehicle. The carbonates of potass and soda are, however, far more agreeable, and perhaps more efficient remedies—of these the bicarbonate of potass deserves the preference. It should be given thrice a-day in doses of ℈j. or ʒss. I think it appears to act best when taken in a glass of warm water. To make it more agreeable, I generally order, what I am accustomed to term to my patients, the artificial Vichy water, made by stirring ʒss. of bicarbonate of potass and gr. v. citric acid into a tumbler of lukewarm water. This mixture evolves enough carbonic acid to be 'sparkling,' and is generally taken with readiness.

A very convenient mode of impregnating the urine with an alkali is to administer the potass or soda in combination with a vegetable acid, especially with the acetic, citric, or tartaric. The mode in which these act is easily explained; when acetate, citrate, or tartrate of potass are ignited, the acid absorbs oxygen, and is converted into carbonic acid and water, part of the former uniting with the alkali. In a similar manner are these salts decomposed during the process of healthy digestion; a carbonate finds its way into the circulation, and reaching the kidneys, renders the urine alkaline. If, however, the digestive powers are impaired, the vegetable acid is only partly decomposed, and in some few persons it escapes the influence of digestion altogether. 114 grains of tartrate of potass, 106 of citrate, and 99 of the acetate, absorb respectively 40, 48, and 64 grains of oxygen, to be converted into carbonate of potass and water. These salts may be administered by directing the use of the common saline powders made with carbonates of potass or soda and the citric or tartaric acid, in effervescence. When not contra-indicated, the use of strawberries, currants, and some other fruits containing alkaline citrates and malates, are capable of making the urine alkaline, and may be occasionally employed with advantage.

Some persons cannot bear the use of free or carbonated alkalies without suffering severely in their general health, nor is their protracted use altogether without some ill effect. A flabby state of the muscles, and an anæmiated condition of the system, is frequently produced by the persistent use of alkaline remedies. Their injudicious employment may, as Dr. Prout has suggested, induce the formation of oxalic acid.

Uric acid is soluble in a solution of borax, the biborate of soda,—more so, indeed, than in alkaline carbonates; and this salt may be taken for some time, at least by male patients, without producing any very injurious constitutional effects, and readily finds its way into the urine. On this account its administration has been suggested in cases of uric acid gravel, but it has not been much employed in this country. In women, this drug cannot be employed with impunity, as it certainly exerts a stimulant action on the uterus, and I have seen it in two instances produce abortion.

The remarkable solvent action of phosphate of soda on uric acid, to which Liebig has lately directed attention, inspires a hope that its administration might be of use in cases of calculous disease, by impregnating the urine with an active solvent. All that is required to ensure this drug reaching the urine is to administer it in solution sufficiently diluted; ℈j. to ʒss. might be administered in any vehicle, as in broth or gruel, as when diluted, the phosphate tastes like common salt, and few persons object to its flavour. I have administered this drug in two very chronic cases of uric acid gravel, and in one with the effect of rapidly causing a disappearance of the deposit. This occurred in the person of a lady about forty years of age, who had, at my wish, for some weeks used the artificial Vichy water of the German Spa at Brighton without relief. The triple salt, ammonia-phosphate of soda, would perhaps be a more active remedy than the simple phosphate, but its disagreeable flavour constitutes one objection to its employment.

Much attention has been lately drawn to the effects of benzoic acid in preventing the formation of uric acid, by the observations of Mr. Alexander Ure. When this acid or its salts are administered, they are acted upon by the stomach in a very different manner from the other vegetable acids. Instead of becoming oxidized, and being converted into carbonic acid, it combines with those nitrogenised elements which would otherwise have formed urea or uric acid, and is converted into hippuric acid. It has been stated that the quantity of uric acid falls, when the benzoic acid is administered, below the average quantity, or even disappears from the urine. This has been, however, shown by Dr. Garrod, to be an error, and that urea alone disappears. Be this as it may, it is certain that the acid does appropriate to itself some body rich in nitrogen to form hippuric acid; and experience has shown that, in cases where an excess of uric acid is secreted, the administration of this drug appears to limit it to about the normal quantity.

Directions for detecting the existence of oxalate of lime deposits. To examine urine for the purpose of detecting the existence of the salt under consideration, allow a portion passed a few hours after a meal to repose in a glass vessel. Decant the upper 6-7ths of the urine, pour a portion of the remainder into a watch-glass, and gently warm it over a lamp; in a few seconds the heat will have rendered the fluid specifically lighter, and induced the deposition of the crystals of oxalate, if any were present: this may be hastened by gently moving the glass, so as to give the fluid a rotatory motion, which will collect the oxalate at the bottom of the capsule. The application of warmth serves, also, to remove the obscurity arising from the presence of urate of ammonia, which is readily dissolved by exposing urine containing it, to a gentle heat. Having allowed the urine to repose for a minute or two, remove the greater portion of the fluid with a pipette, and replace it by distilled water. A white powder, often of a glistening appearance, will now become visible, and this, under a low magnifying power, as by placing the capsule under a microscope furnished with a half-inch object-glass, will be found to consist of crystals of oxalate of lime in beautifully-formed transparent octohedra, with sharply-defined edges and angles.

The crystals of the oxalate, when collected in the manner above directed in a watch-glass, are unaltered by boiling either in acetic acid or solution of potass. In nitric acid they readily dissolve without effervescence. The solution may be very readily watched under the microscope. When the oxalate is allowed to dry on a plate of glass, and then examined, each crystal presents a very curious appearance, resembling two concentric cubes, with their angles and sides opposed, the inner one transparent, and the outer black, so that each resembles a translucent cube set in a black frame. This is best observed under a half-inch object-glass; as with a higher power this appearance is lost.

In a very few cases the oxalate is met with in very remarkable crystals, shaped like dumb-bells, or rather like two kidneys with their concavities opposed, and sometimes so closely approximating as to appear circular, the surfaces being finely striated. These crystals are produced, in all probability, by a prolific arrangement of minute acicular crystals.

On the Treatment of Oxaluria.—The treatment, in the majority of cases, is very successful; a few only resisting all the plans which were adopted. As a general rule, the functions of the body, where obviously imperfect, should be corrected, the general health attended to by the removal of all unnaturally exciting or depressing influences, the skin should be protected from sudden alternations of temperature by a flannel or woollen covering, and the diet carefully regulated. This has generally consisted of well-cooked digestible food, obtained in about equal proportions from the animal and vegetable kingdom; all things which tend to produce flatulence being carefully avoided. The drink should consist of water, or some bland fluid, beer and wine being excluded, especially the former, unless the patient's depression render such positively necessary. A very small quantity of brandy in a glass of water has generally appeared to be the most congenial beverage at the meals. The administration of nitric acid, as suggested by Dr. Prout; or what appeared to be preferable, the nitro-hydrochloric acid, in small doses, in some bitter infusion, or laxative mixture, as the mistura gentianæ comp., was, with minute doses of mercury, generally successful, if continued a sufficient length of time. In cases where these failed, active tonics, especially the sulphate of zinc, and where the patient was anæmiated or chlorotic, the salts of iron in very large doses, appeared to be of great use, by subduing the irritable state of the nervous system. The shower-bath, by acting in a similar manner, has been also of great service. There is one remedy which appears to exercise a marked influence over the characters of the urine, and which, from the small amount of experience I have had with it, seems to hold out the probability of its great utility in the disease under consideration: I allude to the colchicum, which, it is now generally admitted, exerts an immense influence over the organic system of nerves, and the functions under its control. The character of the urine is remarkably influenced by this drug, an excess of uric acid generally being present during its administration; and in two cases, in which oxalate of lime existed in abundance before its employment, uric acid appeared after a few days as a deposit, and nearly entirely replaced the oxalate; a circumstance generally observed during the successful treatment of this disease by other remedies. In no case have I seen the disease suddenly yield; it has generally slowly disappeared *pari passu* with the decrease in number and size of the crystals of the oxalate.

On the pathological indications of phosphates.—The occurrence of deposits of the earthy phosphates in the urine, must be regarded as of serious importance, always indicating the existence of important functional, and too frequently, even of organic mischief. One general law appears to govern the pathological development of these deposits, viz. that they always exist simultaneously with a depressed state of nervous energy, often general, rarely more local, in its seat. Of the former, the result of wear and tear of body and mind in old people, and of the latter the effects of local injury to the spine, will serve as examples. It is true, that in the majority of these cases there is much irritability present, there is often an excited pulse, a tongue white on the surface and red at the margin and tip, with a dry, often imperspirable, occasionally hot skin. Still it is irritability with depression, a kind of erythism of the nervous system, if the expression be permitted, like that observed after considerable losses of blood.

[Dr. B. recognises at least four different pathological conditions connected with deposits of the earthy phosphates.]

A. Cases in which dyspepsia, with some febrile and nervous irritation, exists, independently of any evidence of antecedent injury to the spine.

B. Cases characterised by high nervous irritability, with a varying amount of marasmus, following a blow or other violence inflicted on the spine, but without paralysis.

C. Cases in which the phosphatic urine co-exists with paraplegia, the results of spinal lesion.

D. Cases of diseased mucous membrane of the bladder.

[The treatment of the first class of cases must be rather directed by general principles than limited to the solution of the phosphatic deposits.]

It is true that by the persistent administration of acids the deposit may disappear for a time, but the ailment goes on; all that is effected by such treatment is to mask a symptom, and an important one, of the progress of the malady. After having attended to the morale of the case, as far as possible rousing the patient from any morbid influence excited in his mind, whether real or imaginary; the next thing is to attend to the general health. The bowels should be freed from any unhealthy accumulation by a mild mercurial laxative, as a few grains of pil. hydrarg., followed by a dose of rhubarb or castor oil; but all active purging should be avoided, as it generally aggravates the distress of the patient, and decidedly interferes with the success of the treatment. A combination of a tonic-laxative with a sedative may then be administered, as tinct. hyoscyami et sp. ammon. aromatici aa ♏xx—ʒss. ex mist. gentianæ co. ℥j. ter in die. If the bowels be irritable, the inf. cascarillæ, or inf. serpentariæ, may be substituted for the mist. gentianæ comp. Should gastrodynia exist, great relief will be obtained by the administration of half a grain of oxide of silver, made into a pill with confection of opium, before a meal. The diet should be very carefully regulated, all bland nutritious articles of blood being preferred; vegetables should be avoided, and in general a small quantity of good sherry may be allowed. By a plan of treatment of this kind, the patients generally do well, and the phosphates and excess of urea vanish from the urine. As the patient approaches convalescence, much good is often effected by the use of sulphate of zinc in gradually increasing doses, beginning with a grain thrice a day, made into a pill with a little ext. hyoscyami, or ext. gentianæ, and increasing the quantity every three or four days, until five grains or more are taken at a dose. Under the use of the zinc, I have seen many cases do well, whose symptoms approached in severity and character those of mild delirium tremens. I need hardly say that change of scene and occupation are important adjuvants to our medical treatment.

[The second class of cases are far less amenable to treatment.]

In these, the phosphatic deposit is often copious, and sometimes consists nearly exclusively of phosphate of lime; the lumbar pain and weight are considerable, the skin often dry and scarcely perspirable; in some cases, indeed, I have seen it look as if varnished; the tongue sometimes white, is often red; the thirst often great; indeed, the general appearance of the case closely resembles one of diabetes. The urine is generally more copious than natural, frequently pale, and of a specific gravity below the average. On investigating the patient's history, some evidence of a previous strain or wrench of the back, or a blow over the spine, is always elicited. These patients are seldom hypochondriacal; but intense irritability of temper, and a painful anxious expression of countenance and manner, are almost inevitably present.

In the treatment of these cases, the great end and aim must be to subdue the morbidly irritable state of the brain and nervous system; and, subsequently, by a generous diet and persistent use of those tonics which appear especially to exert their influence on the organic nerves, as silver, bismuth, zinc, &c., to endeavour to restore the assimilative functions to their due vigour. Besides the general indications to be fulfilled by regulated diet, amusements, exercise, &c., the use of narcotics, especially of opium, or the preparations of morphia, should be regarded as of the highest value; and we are indebted to Dr. Prout for first directing the attention of the profession to their use.

Cases occasionally occur in which the symptoms are of a much milder character, but which insidiously go on to the formation of a calculus. It is in these in particular that the use of acids is called for, to hold the phosphatic salts in solution, and prevent their being moulded into a concretion in the pelvis of the kidney. Unfortunately there is a great uncertainty attending their use; sometimes the mineral acids appear to reach the urine and destroy its alkaline character; often, however, even their continued employment appears to be utterly ineffectual in rendering the urine acid. So far as I have watched cases of this kind, the nitric acid has appeared to produce the smallest amount of gastric derangement, and to render the urine acid, or at least diminish its alkaline reaction. In one case lately, in which the nitric acid could not be borne, the phosphoric appeared to succeed.

[In the third class of cases, the deposition of the phosphates is a sure symptom of a grave and serious lesion, and must be treated according to the particular disease existing.

The fourth class of cases, or " those in which the phosphates are probably entirely secreted with unhealthy mucus by a diseased lining membrane of the bladder," are familiar to every practitioner.]

One point of great practical consequence must be borne in mind in forming a prognosis from the state of the urine, viz., not to regard it as ammoniacal, because the odour is offensive; and not to consider the deposit as purulent because it looks so. A piece of litmus paper will often show the urine to be really acid, and microscopic inspection often proves that the puriform appearance of the urine is owing to abundance of phosphates with mucus. For want of these precautions I have seen one or two cases regarded as almost hopeless, which afterwards yielded to judicious treatment. It is quite certain that the mucous membrane of the bladder may, under the influence of chronic inflammation, secrete so much of the earthy phosphates and unhealthy mucus as to render the urine puriform and offensive without having necessarily undergone any structural change.

A few cases have occurred to me in practice, in which the kind of urine just referred to was secreted for a long time, and yet yielded readily to treatment. In these, the greatest good has arisen from freeing the bladder from the phosphates which appear almost to incrust it, by acid injections. In this way cases have occasionally yielded which have quite defied all other treatment.

[In one case which Dr. Bird relates, great benefit was obtained by the daily careful injection of acid. hydrochlor. ♏x, with vini opii ♏xx. in barley-water.

With respect to the influence of diuretics, Dr. Bird lays down three " general laws" which regulate the action of these remedies.]

Law 1st. All therapeutical agents intended to reach the kidneys must either be in solution when administered, or capable of being dissolved in the fluids contained in the stomach or small intestines, after being swallowed.

Law 2nd. Bodies intended to reach the kidneys must, to ensure their absorption, have their solutions so diluted as to be of considerably lower density than either the liquor sanguinis, or serum of blood.

Law 3. If a sufficient quantity of water cannot be received into the small intestines, or the circuit through the portal system in the vena-cava ascendens, or thence through the lungs and heart into the systemic circulation, be obstructed, or if there be extensive disorganization of the kidneys, the due secretions cannot be effected.

1. Whenever it is desirable to impregnate the urine with a salt, or to excite diuresis by a saline combination, it must be exhibited in solution, so diluted as to contain less than five per cent. of the remedy, or not more than about twenty-five grains in an ordinary

draught. The absorption of the drug into the capillaries will be ensured by a copious draught of water, or any diluent, immediately after each dose.

2. When the urine contains purpurine, or other evidence of portal obstruction exist, the diuretics or other remedies employed should be preceded or accompanied by the administration of mild mercurials,—taraxacum, hydrochlorate of ammonia, or other cholitic remedies. By these means, or by local depletion, the portal vessels will be unloaded, and a free passage obtained to the general circulation.

3. In cases of valvular or other obstructions existing in the heart and large vessels, it is next to useless to endeavour to excite diuretic action, or appeal to the kidneys by remedies intended to be excreted by them. The best diuretics here will be found in whatever tends to diminish the congested state of the vascular system, and to moderate the action of the heart; as digitalis, colchicum, and other sedatives, with mild mercurials.

Medico-Chirurgical Review, April 1845, *p.* 532.

36.—*On Uric Acid.* By JUSTUS LIEBIG, M.D., PH. D., F.R.S., &c. The knowledge of uric acid, and of its compounds, as well as of the alterations and modifications produced by it in the action of chemical agents upon it, is of peculiar importance, since this substance is a product of the animal organism exclusively. Uric acid is found to be present in the urine of all classes of animals, although in exceedingly variable proportions. Thus, for instance, the urine of lions and of dogs contains only traces of uric acid, whilst the solid part of the urine of birds and snakes consists almost exclusively of this acid. It deserves particular attention that the urine of all animals contains invariably either uric acid or urea, and that in fact, these two substances exist in the urine of animals in a certain antagonistic proportion to each other—i. e., when the amount of uric acid present is large, there is either absence of urea, or this last substance is present only in a trifling proportion, and thus, *vice versa*, when the amount of urea present is large, there is absence of uric acid, or the acid is present only to a very small amount. These remarks apply, of course, only to the normal state of the animal organism, for disease changes all these proportions and relations. As far as our present knowledge and observations enable us to judge, the production of uric acid in the animal organism must be considered as altogether independent of the nature and origin of the food partaken of; thus those birds which feed exclusively upon grain—i. e., vegetable aliments, secrete copious amounts of uric acid, and no urea, whilst tigers and lions, which feed exclusively upon flesh, secrete only traces of uric acid in their urine; but, on the other hand, snakes, which likewise feed upon flesh, secrete only uric acid. It cannot be called in question that the formation of the uric acid, as secreted by various classes of animals, proceeds from the nitrogenous constituents of the food, and that these constituents undergo certain alterations or modifications, in the vital process, owing to which their nitrogen assumes the form either of uric acid or of urea.

Questions such as "What are the external conditions that influence this form?"—"What causes the uric acid to preponderate in amount, urea being absent; or, on the other side, the formation of urea, and the disappearance of uric acid?" cannot properly be discussed until we have first ascertained the properties and deportment of uric acid.

The urine of man deposits, upon cooling, or after standing at rest for some time, uric acid, or alkaline urates, in small coloured scales: many kinds of guano consist of urate of ammonia to the extent of one-third of their weight, and the excrements of snakes consist almost exclusively of urate of ammonia.

Lancet, Feb. 1*st*, 1845, *p*. 107.

37.—*On the State of the Blood, produced by Absorption of Urine.* This form of the disease is described by Autenrieth and Schonlein, under the title of *urodialysis*, and by ancient authors, under that of *ischuria*, or *paralysis vesicalis*, *urpolania*, &c. It has been established by recent researches, that urea and uric acid are formed in the blood in consequence of defective renal secretion, and that it can be excreted from the blood by other organs than the kidneys. Urea has been found in the perspiration, the fæces, and the matters discharged by vomiting; in the air expired from the lungs, in the saliva, the tears, the milk, and the fluid exhaled from the serous membranes, the secretion from ulcers, &c.; and this has commonly happened with patients who had suffered for some time with retention of urine. Numerous cases show that these vicarious secretions permit of retention of urine existing for days, and even weeks, without danger to life.

The urea, when introduced into the blood, seems to produce a morbid condition of the whole stream, and thus destruction of life. For it is proved, that urea enters very readily into combinations, even by mere change of temperature, and that it is particularly inclined to transformation into carbonate of ammonia, while the latter salt possesses the property of readily dissolving the fibrine of the blood. The symptoms, described by modern authors under the title of *urodialysis senum*, are thus different from those observed by the author; for, in the latter, there was no pronounced acidity, no ischuria urinosa, asthma urinosum, nor prurigo senilis, &c. But they were very similar with those described by Morgagni and Stoll.

Medical Times, Nov. 16, 1844, *p*. 140.

38.—REMARKS ON SCARLATINAL DROPSY.

By Golding Bird, A.M., M.D.

[The following may be taken as a sample of the appearances usually presented by a child labouring under scarlatinal dropsy. The patient is attacked, say a fortnight before, with scarlatina, the eruption subsides in a week, and the child seems doing well, but afterwards effusion into the abdomen makes its appearance, which spreads to the extremities; face waxy and puffed, pulse quick and feeble, urine dingy and coagulable, and the surface of the body is dry, smooth, and cold. The treatment is very simple. The patient must be dressed in flannels, kept in bed, and have hot bath every night, and and take m x. vin. ant. tart. and m x. syr. papav. in ʒiii jalep. ammon. acet. every four hours, and gr. iiiss. p. ipecac. comp. c. gr. v. hyd. cu cret. every night, and afterwards, when the œdema has subsided, and the urine is improved, ʒj vin. ferri three times a day.

The causes by which œdema and congestion of the kidneys are produced in some cases of scarlatina are not very evident. As, however, it occurs chiefly amongst the lower classes, who are so extremely negligent in the matter of cleanliness, there can be no doubt that the most serious exciting cause is the non-establishment of free perspiration after the disappearance of the rash. This non-performance of the cutaneous functions must induce renal congestion, whence the evils caused by inference with the duties of these important organs of depuration. The warm bath, with a large bran or linseed-meal poultice to the loins, is generally sufficient to relieve the renal congestion occurring in these cases in children.

If due care were taken to restore the functions of the skin after scarlatina, by the use of warm baths and flannel clothing, the resulting dropsy would be very rare. Yet in Dr. Bird's opinion this is by no means to be regarded per se as the real cause of these effects; but rather that the want of a freely perspiring surface, by determining the blood to the kidneys especially, places the patient in the most favourable condition for the development of the effects of the unexhausted poison of the pre-existing disease. To render this clearer, he lays down in an aphoristic form the facts recognized in connection with the development of the disease in question.]

1. The anasarca does not appear during the existence of the rash.
2. The sequelæ, which do not depend on local mischief about the throat, usually appear about the end of the first week after the the recession of the rash, rarely before, and not often after this period.
3. The frequency of their occurrence is in the inverse ratio of the vividity of the rash.
4. The urine contains certain of the elements of the blood (albumen and red particles,) with a considerable number of large organic globules.
5. The blood contains some of the elements of urine, as proved by the existence of urea in it, as well as in the secretions derived from it.
6. Analogous effects, although looked for, have not been observed on the recession of other exanthems, as measles and small-pox; nor in cutaneous affections in which free perspiration must be checked, or greatly lessened, as in lepra, psoriasis, chronic eczema, &c.

Admitting that the foregoing propositions are fully borne out by past experience, we cannot fail to recognize the affection under consideration as something peculiar, and bearing a definite relation to the poison of scarlatina, and not as the result of a mere impaired state of the function of the skin.

There can scarcely be a question of the, at least conventional, accuracy of the old opinion, now lately revived, of scarlet fever being essentially a disease of the circulating fluid; that in fact the peculiar poison of scarlatina, when it affects an individual, plays the part of a ferment, deranges the healthy condition of the blood, acting as a poison as effectually as if directly injected in a palpable and visible form into the blood vessels. Hence scarlatina, like variola, rubeola, glanders, &c., is regarded as a zymotic affection. A person, then, who is inoculated, no matter in what way, with this septic poison, after a period of time, which has not been satisfactorily determined, becomes the subject of the well-known symptoms of scarlet fever. During this period of incubation there can be no question but that the effects of the poison are influencing the system at large, so that no tissue or secretion of the body can be said altogether to escape completely its malignant influence. The result of this effect of the poison is a great determination of blood towards the cutaneous and mucous surfaces, shewn by the characteristic rash covering the former, and the injected erythismic state of the latter. Many of the glandular structures also partake of this congestion, as is generally shewn in the throat by the inflamed and swollen tonsils and sub-maxillary glands. If the exanthem be vivid, and its eruption copious, nothing occurring to check its full development, or arrest its course, the effects of the poison become, accidents apart, exhausted, desquamation of the cuticle occurs, and convalescence results. But if, on the other hand, some irregularity takes place in the normal development of the effects of the scarlatinal poison, and its elimination by the surface is prevented, the patient may apparently convalesce for a time satisfactorily; but the poison not being all excreted or destroyed, some of the recognized after-effects result Even if the powers of the patient are sufficient to enable him to combat successfully the effects of this relict of the poison, a check given to the re-establishment of the cutaneous transpiration by too early an exposure of the influence of alterations of temperature will be sufficient to prevent the due excretion or decomposition of the remaining *materies morbi*, and one or other of the ailments before alluded to are ushered in.

[In what manner does the presumed relict of scarlatinal poison act in producing the peculiar after-effects of the disease? Granting the existence of an imperfectly exhausted materies morbi in the blood after the disappearance of the incompletely developed exanthem, attempts will be made to excrete this matter, under some form or other, by some of the various emunctories of the body. We cannot doubt that the skin is adequate to the task, since the after-effects are so extremely rare when a freely perspiring surface has been obtained soon after the recession of the rash, but when this means of excretion has been insufficient or stopped by cold or want of cleanliness, an attempt is made to get rid of the relict of the disease by some other outlet.]

From the researches of Wohler and others, with which the profession is perfectly familiar, it seems demonstrable, that, as a general rule, all effete matters existing in solution in the animal fluids are excreted by the kidneys. Accordingly, a large supply of blood is sent to these organs, their capillaries become dilated, and congestion occurs. The almost necessary result of this pathological condition of the kidneps is a double lesion of their function. An exudation of the albuminous elements of the blood occurs, and renders the urine coagulable, its tint being often darkened by an admixture of of red particles; whilst, on the other hand, the kidneys cannot carry on their important depurating functions perfectly: they eliminate but imperfectly the nitrogenized effete elements of the blood, and hence one or more of the normal constituents of the urine are detectible by chemical analysis in the circulating mass. Contemporaneously with these lesions, more or less effusion into the loose sub-cutaneous cellular tissue, to a varying amount, generally but not necessarily occurs.

The train of effects, often of a grave character, following scarlatina, are almost all, I believe, really referrible to the retention of the nitrogenized elements of urine in the blood; a conclusion, the adoption of which is justified by the analogy existing between the disease under consideration and Morbus Brightii, in which the existence of effete nitrogenized matter in the blood is, at least in several of its phases, a necessary accompaniment. The recognisable sequelæ of scarlatina referrible to this category are characterized by the tendency to the setting up of serous inflammation, especially of pericardium, pleura, and arachnoid. Cases of pericarditis often have been by no means very unfrequent among the children who had suffered from scarlet fever; and certainly a month has not passed without meeting with cases of heart disease referrible distinctly to pericarditis following attacks of scarlatina.

It may not be uninteresting to those less acquainted with chemical manipulation, to describe a simple and easy process for the detection of the urea in the blood and serous fluids, in the cases just alluded to. Allow the blood to coagulate, decant the serum, and agitate it violently with its own bulk of rectified spirit; a dense deposit of albumen occurs, and the mixture may be set aside for subsequent examination, or, if time permits, this may be proceeded with immediately. For this purpose, throw the whole on a filter, and evaporate the filtered fluid slowly to a drachm or two; then add to it an equal bulk of dilute nutric acid of the pharmacopœia, and once more filter. The filtered fluid, collected in a watch-glass, may be slowly evaporated to a few drops, and, on cooling, feathers of nitrate of urea will form in the liquor. Should the crystallization be imperfect, the deposited nitrate may be re-dissolved in a few drops of water, the solution decanted, and once more slowly evaporated. By this simple process, requiring no apparatus beyond an evaporating dish, any one may satisfy himself of the existence of urea in serous fluids containing it. With ordinary care the evaporation may be performed on the hob of a parlour fire-place, especially if a piece of card-board is interposed between the evaporating dish and surface of the hob, to prevent any accidental elevation of the temperature to too high a point.

Guy's Hospital Reports, April, 1845, *p.* 131.

39.—*On Diabetes, shewing the effect of Climate in its Treatment.* By Keith Imray, M..D. [Perhaps the treatment of diabetes by an animal diet has met with more success, at least as a palliative, than any other—and it would probably be still more successful if it could be rigidly followed up, which is next to an impossibility. The use of opium is another useful palliative. Diaphoretics are especially indicated by the dry parched skin which so generally exists, and which is often one of the earliest symptoms. A return of the natural functions of the skin is also one of the earliest symptoms of amendment. This has been remarked many years ago by Dr. Christie, who found the disease much more manageable in Ceylon than in this country. It is, moreover, seldom seen in very warm climates. Dr. William Hunter, during a long residence in Bengal, never saw a case; and Dr. Imray during a residence of seven years in the West Indies never saw or heard of a case commencing there. From several cases which this gentleman has published we should say that a residence in a very warm climate is a most powerful means of restoring the healthy function of the skin and curing the disease.]

Edinburgh Medical and Surgical Journal, Jan. 1845, *p.* 65.

40.—*Nitrate of Potass and Benzoic Acid in Enuresis nocturna.* [Dr. J. Delcour, of Verviers, Belgium, after some remarks on the various plans of treatment which have been tried for the cure of this affection, which will be found in former numbers of this Retrospect, says that the general opinion that it ceases after the second dentition is far from being correct, for out of thirteen cases recorded, six had passed that period. He brings forward two remedies, nitrate of potass and benzoic acid, the latter employed for the first time, and says respecting them:]

The efficacy of the nitras potassæ was made known to the profession by Dr. Young, of Chester, who discovered it by mere chance. This physician, when called in to a lady affected with enuresis, prescribed cantharides internally, which gave rise to inflammatory symptoms, and necessitated antiphlogistics. Two days after, the accident having decreased, Dr. Y. ordered: ℞ nitrat. potass. gr. x., tertia quaque hora sumend. Seven days after, the cure was complete. Such a result led him to employ it in similar cases and with equal success, and the author has not been less fortunate. As to acidum benzoicum, its known action on the vitality of the mucous membranes led to its administration in two cases where nitre and strychnine had failed, and its effect was as expected. In the thirteen cases recorded, the ages were 12½, 11, 11, 11, 10½, 9½, 7, 6½, 6, 5, 5, 5, and 4 years; the disease had lasted (at least as far as could be ascertained) from six years to one week; the cure was obtained by the nitrate of potass alone in ten cases; the time it was given being, in eight, from three weeks to three months; in the two others the cure was immediate; in these ten cases, enuresis occurred sometimes every day, sometimes three or four times a week; the prescription was—℞ nitrat. potass. gr. x., ter in die. In the three remaining cases, other means were requisite; thus, to a child eleven years old, nitre at the usual dose was given for five weeks without effect, and was replaced by: ℞ strychnin. gr. ij., extract. tritic. repent. ʒ ss., M. ft. pilulæ, No. xxx.; quarum j. bis in die sumend., increased to two twice a day four days after; this medicine was persisted in for three weeks, and then the nitre recommenced; cure in a fortnight. With a second, 10½ years old, not only the nitras potassæ, but likewise the strychnine pills failed; the following prescription was therefore had recourse to:—℞ Acid. benzoic. ʒ ij; man. ping. q. s. ft. pilulæ No. xl., quarum, ij. bis in die sumend; cure in three weeks. Finally, with a third child 9½ years old, the nitras potassæ, ʒ ss in two doses per diem, and first two and then four strychnine pills, failed, and the cure was obtained in the course of three weeks, by means of four pills of benzoic acid daily. The quantity of urine emitted was considerable, in the two last cases. To resume: of thirteen cases, the nitras potassæ succeeded in eleven; in one only was strychnine necessary; as to the mode in which the former acts, the author differs in opinion from Dr. Young, and thinks that the amelioration is produced by diminishing the excitation of the bladder.

Medical Times, Jan. 4, 1845, *p.* 303.
(Quoted from Journal de Med de. Bruxelles.)

41.—ON RHEUMATISM.

By C. J. B. Williams, M.D., F.R.S., &c.

[Rheumatism is usually divided into acute and chronic; sthenic and asthenic are more appropriate terms. The crick in the neck produced by sitting in a draught is a kind of rheumatic affection, and the same may be said of lumbago and sciatica, which are neuralgic forms of the same complaint.]

The distinction between the forms of rheumatism is very easy, more particularly in chronic cases, in which the peculiar products of the inflammation are more confined to the specific parts that are affected. In the first place, there is the most acute and inflammatory kind—the acute diffused articular rheumatism—which affects all the joints, and is not confined to any particular structure. In acute rheumatism of the knee, you find the patella is floated up by the effusion under it, besides which there is a considerable enlargement with tenderness and swelling of the surrounding bursæ, and the skin may assume the appearance of common inflammation. This form resembles common inflammation, and is, consequently, more tractable. The second variety is the acute fibrous or fascial rheumatism, where the inflammation attacks chiefly the fibrous textures, the fasciæ between the muscles, the aponeuroses, the periosteum, and the fibrous coverings of the viscera, more particularly the pericardium. In the other form the pericardium is not affected. The endocardium is also affected. The seat of this inflammation is confined to the joints themselves; there is more or less pain and swelling in the joints, and also swelling between the joints in the fore-arms, the backs of the hands, and in the legs. There is a sort of diffused swelling over the limb affected, not simply a fluctuating swelling in the capsules and bursæ, but more diffused. This is one of the least tractable forms, and is less amenable to common antiphlogistics, and requires specific treatment: depletion alone produces little benefit here. If the disease goes on long, it tends to produce the chronic form, together with muscular paralysis and atrophy. The third variety is the synovial or capsular rheumatism, affecting exclusively the capsules of the joints, and the synovial membrane. It is usually accompanied by great swelling, and distention of the capsules of the joints, particularly those of the knee joint. It is, like the other variety, intractable, and bears a close resemblance to gout. It occurs chiefly in cachectic and debilitated subjects, from an imperfect action of the kidneys. This is the form which, becoming chronic, more particularly tends to produce the distortions of which I have been speaking. There are depositions in the joints, forming nodosities, and creating permanent stiffness. In this form, too, it is that that peculiar deposit of lithate of soda has been found on the skin after perspiration. This affection closely resembles the chronic form of gout; it is said, too, sometimes to cause metastasis, but it affects the heart less than the other varieties. The fourth variety of rheumatism is the periostitic. Here there is pain, tenderness, puffiness, and swelling over some bony surface,—either over that of the cranium or the tibia. This is generally the result of syphilitic poison. Its tendency is to become chronic, and to produce nodes and bony deposits. It may also arise independently of syphilis. This form of rheumatism affects the head, producing obstinate headaches. It is not confined to the dura mater, but affects the interior of the head. It seems, too, to produce symptoms of a tetanic and convulsive character, closely resembling an attack of chorea. Another variety is the neuralgic, which is seated in the nerves, producing severe pain. This rheumatic inflammation affects the sheath of the nerves. In lumbago, the inflammation affects the loins and the back, and by-and-bye the pain settles down into the course of the sciatic nerve, whence there may be severe pain and tenderness down to the leg and sometimes into the scrotum, which obviously arises from the rheumatic affection becoming localised in the sheath of the nerve. It is a form of rheumatism which is less tractable than the others, even with antiphlogistic means. This is another circumstance which tends to prove that the inflammation is dependent not on common causes, but that it is an inflammation of a particular kind, wandering in the system, and exciting inflammation in many parts, and exciting either acute or chronic symptoms in proportion to the intensity of the cause. There in fact seems to be something in the blood which ought to be excreted, an opinion which is confirmed by the peculiar efficacy of certain medicines. Now, taking this view, you will be able to understand what is called metastasis, or the translation of rheumatism; not a translation of the whole disease, but of the morbid matter in the system, operating sometimes on one part, and sometimes on another. This is not the same thing as the disease being translated from one part to another, in which case there would be no simultaneous appearance of the disease in various parts, which we find to occur when the disease is very active. All these inflammations are the results of the operation of the same cause, the *materies morbi*, or morbid matter diffused through the system, simultaneously affecting various parts. Now there is one peculiar rheumatic affection of the heart, that excites more permanent suffering in that organ than any other cause. The heart is continually in motion, never at rest, the inflammation seeming to be completely lodged in it. When the joints are still, the heart is working tumultuously, owing, in connexion with the fever, perhaps to the exciting quality of the blood itself. This is one reason why the heart is so liable to suffer during the attacks of acute rheumatism. I have found that of all cases of acute rheumatism which I have closely examined within the last eight years, the heart has been affected in three-fourths of the number.

The treatment of rheumatism will vary according to its kind. In the sthenic acute cases, particularly the diffused articular, also in the fascial and synovial varieties, copious blood-letting in the very early stage will sometimes arrest the disease, and mild purgatives and other evacuants will complete the cure. But, if the disease has lasted two or three days—especially if it has been preceded by much general disorder—then there is no probability of mere depletion curing the disease; indeed there is some risk arising from its use at this period, or under the above circumstances. Depletion subdues the common inflammation, but it does not remove the cause of the disease from the system. It converts the acute or sthenic into the chronic form of rheumatism. Very often free blood-letting in rheumatism causes metastasis to the heart. The same objection may be applied to local blood-letting from rheumatic limbs, particularly in the acute fibrous form. It is much more favourable if the rheumatism remains in the limbs without affecting any other part of the body, such as the interior of the heart. Local treatment never will remove the constitutional cause, nor will blood-letting do so. Blood-letting reduces the system to such a state that other medicines can be brought into operation, and in that way only is it efficacious. It should be used at the first onset without carrying it to an extreme extent. The chief object to be gained by it is to reduce the increased action. The average quantity of blood which it is advisable to draw at a single blood-letting is from 16 to 20 ounces. If the heart is attacked, then apply local treatment. Now what are the medicines which can attack the constitutional causes of rheumatism? There are several that seem to have this power. Mercury combined with opium seems to have some efficacy in this way, and though it is more of an antiphlogistic remedy, it is yet an important one, and should always be employed when the head has become implicated. In the acute inflammatory form, a large dose of calomel once, twice, or three times a day should be given; the first dose not being combined with opium in order to act as a purgative; the proportion of calomel with opium, in the subsequent doses, must vary according to the symptoms. If the inflammatory symptoms increase, it should be combined with antimony, and if the nervous symptoms predominate, opium and morphia should be combined. Dr. M'Lleod who has written on this subject, discredits mercury, but Dr. Chambers is a great advocate of it. It is not so efficacious alone as in combination with other means, and the most important of these is colchicum, which is the great anti-rheumatic as well as the great arthritic or gout remedy. It is of great consequence to use colchicum from the beginning; not that it takes effect in very acute cases, but it begins to saturate the system, which requires that there should be a certain quantity of the remedy in it, or, at least, that the patient should have taken it for some time before it begins to produce its specific effect. The best form to give it in is that of the wine; the dose varying from 20 minims to half a drachm, or even more, three times a day, combined with an alkali. Its effect is to increase the quantity of lithic acid in the urine in a very signal manner, and, as this takes place, the urine increases in quantity and specific gravity, and in proportion to these effects the pains become reduced and subside. There are other remedies that seem to produce the same effect, though in a less degree. These are, iodide of potassium and guaiacum; they operate much in the same way as colchicum, but with much less certainty. Mercury should be administered with colchicum until the gums are affected, or diarrhœa is produced. The object is not to produce diarrhœa if possible, for that is far from being of advantage in the treatment of rheumatism, and I have cured some cases of the disease without sickness being produced. When the rheumatism is severe, diminish the quantity of colchicum, and join opium with it. In the synovial form, mercurial treatment is rarely necessary at all, but the colchicum treatment is the great remedy. The other forms of rheumatism are of the lower kind. Lumbago, which is of an acute character, may sometimes require cupping at the loins, particularly if the kidneys are much irritated, but, generally speaking, colchicum is the proper remedy for it. Sciatica, which often originates from lumbago, may require cupping over the sciatic nerve, but that will yield to colchicum, given in increased doses, and continued for a long time. In the sthenic forms of rheumatism, whether acute or chronic, blood-letting and purgatives or antimony are required, and colchicum is to be given. Mercury may be sometimes necessary, particularly in the fascial form. It is in this form that guaiacum combined with ammonia is efficacious; and iodide of potassium is another effectual remedy here. Tonics are also found useful in this form. Vapour, hot air, and hot baths, are highly serviceable in some of the other forms of rheumatism. The use of the hot bath in acute rheumatism is a most pernicious practice, and I have known many instances in which it has been attended with the most disastrous results. Stimulating embrocations are of great use, particularly those combined with iodide of potassium. In cases where the inflammation is localized, local depletion, blistering, embrocations, and the shampooing bath are necessary. In fascial rheumatism, strychnia applied externally is of use, and some people give it internally. In periosteal rheumatism, great benefit is derived from iodide of potassium as well as colchicum. Sciatica often takes on the chronic form, and it may then be relieved by turpentine frictions and acupuncture.

Medical Times, March 29th, 1845, *p*. 543.

42.—ON ACUTE RHEUMATISM.

By J. Arthur Wilson, M.D., Physician to St. George's Hospital.

[Dr. Wilson seems to differ from most other writers on the nature and treatment of this disease, "whose principle of cure is one of unrestrained spontaneous action." Hence he disapproves of the treatment by calomel and opium even when the suffering is acute, attributing many of the severe complications of the disease to this remedy. On this subject he says :]

It is a rude empirical practice, which seldom succeeds, and failing of success, is most injurious to the patient. In its routine application to the languid, weak, and exhausted, as to the full and vigorous habit of body, there is reason to believe that it has destroyed very many who, under less popular and energetic methods of treatment, would in due time have recovered.

It does not necessarily counteract inflammation of the heart, lungs, or pericardium. Again and again it has been observed in practice, that "heart symptoms" have been rapidly developed in cases of rheumatic fever, while under treatment by large and frequent doses of calomel in combination with opium. In many of these cases, is it not more than probable that the fevered masses of blood in circulation through the chest are directly influenced to their further prejudice by admixture with the drug and the mineral ? With a full belief in the special curative agencies of mercury, yet knowing, in certain constitutions, how entirely it disagrees, and how dangerous it occasionally becomes from coincident effects of functional disorder or organic disease, we cannot be too careful in opposing it specifically to the fever of acute rheumatism. Calomel is not in any special relation of cure or relief with the rheumatic diathesis, and should not be employed in the simple rheumatic more frequently than in the simple continued fever. When I first entered on hospital practice, though continually deprecating the reckless use of mercury which then prevailed, I fell much into the habit of prescribing two grains and a half of calomel, with the fourth, or the half of a grain of opium, at intervals of four or six hours, in the early stages of rheumatic fever. I have now for many years past discontinued the use of this compound alterative, and see no reason to recur to it.

There has been, of late years, such a crying up, among certain sectarians in London physic, of calomel in combination with opium, as specific in all inflammations, general, local, and special, that, holding this prescription on a threefold trust, we are compelled to it, on every count, in the cardiac aggravations of rheumatic fever.

Yet who could with confidence affirm that, by the employment of this formula, he had, in any one instance, prevented adhesion of the pericardium, or arrested the vegetations, by fibrinous deposit, on the cardiac auricular valves. Assuredly, under the free use of calomel with opium, the symptoms, as obtained by sound or otherwise, that are observed in coincidence with these states of the heart and its membranes, have not unfrequently been known to subside; but it is equally certain that the same effects of relief have followed, on very different and less energetic modes of treatment. The question remains, whether the mercurial salt, not being always needful in cardiac rheumatism, may not sometimes be injurious.

In exhausted cachectic habits, with which this form of the disease is frequently associated, there is great reason to believe that mercury determines a further mischievous activity in the structures, which, by a process of inflammation, are already abusing the material and business of their own nutrition. There is a large body of medical practitioners, happily not increasing in this country, in whose small code of physic, "inflammation" is the universal bane, and calomel the only antidote. To these off-hand prescribers, exclusively "practical," and supereminently "regular," it is matter hard of belief, that lymph may be fast exuding on the serous surfaces of the chest, while a mercurial saliva is flowing largely from the mouth. I have never seen more of ragged pulpy deposit on the surface of the heart from recent inflammation of its investing membrane, than in the case of a young woman who was brought, some five or six years ago, into St. George's Hospital, (shortly before her death,) profusely salivated in sequel of rheumatic fever.

[We must confess ourselves as among the number of those practitioners who depend a good deal on the use of a *moderate* exhibition of mercury in many inflammatory affections, but we do think that opium is too much combined with this drug: we do not however, think it well to use mercury in the excessive doses which are too often given,—"profuse salivation," so much dreaded by Dr. Wilson, is now very seldom produced—a rapid but mild action is without doubt indispensible in many dangerous inflammations, and even more efficacious than when increased.

Dr. Wilson also disagrees with the practice of giving colchicum, and even allows not the use of the lancet. He says:]

It would seem, throughout the disorder, that, in familiar phrase, more good is done by the joints to the constitution, than by the constitution to the joints.

In the treatment of this disorder. its analogies with gout and rheumatism should be continually remembered. Like them, it may be partial, irregular, or suppressed; and, like them, it is rendered comparatively safe by development. The independent separate power of nutrition, temperature, and function, which, in disease as in health, the living structures are severally capable of exercising, is in no way more strikingly illustrated than by the arthritis of rheumatic fever. Elbow, knee, wrist—every great joint, it may be, in succession, sets up, maintains, and brings to a close, its own special process of inflammation, irrespectively each of the other, and this without abatement of the general disorder, which remains in operation through the system, until the arthritic crisis is everywhere completed and determined; and here is a recurrence of the great practical lesson by which, in this disorder, we are continually taught to bear patiently with fever, and to look, with favour on inflammation. The true origin of symptoms is from the business of nutrition in the extreme textures of the body. Hence, all the evidences of impaired vital agency will be found to proceed, and among them, in its local varieties, Inflammation, which is but an expression of the nutritive function, rendered difficult, for the time, in particular structures. Inflammation originates no movement, creates no function, brings no new elements into operation; it is not an acquired principle, but an innate faculty, held in trust by every living structure from the beginning, for the means of self-protection, and as a security, under injury, for redress. Thus considered, the arthritis of acute rheumatism is respected by the physicians as salutary, under circumstances, and as working, with the fever, *to a cure.*

For the safe and better construction of its pathology, it is of great practical importance that the self-adjusting character of this highly composite disorder should be likewise recognised in its local segments. In the extremity of suffering induced by rheumatic inflammation in the joints, we are continually tempted, under a false compassion, to prescribe with undue energy for the removal of its cause, thus disturbing the natural succession of symptoms, which, in this as in other idiopathic fevers, are pre-arranged, by purpose, to an end. These partial inflammations of membrane and fibre define themselves, for the most part, with the same regularity as the fever, in which they all conspire; generally receding in less than forty-eight hours from their several points of attack. Locally, on this principle, they are best treated when most let alone. The affected joints, when urgently painful, may be soothed with tepid washes of the liquor ammoniæ acetatis, combined with laudanum, or with dry fomentations of hop, bran, and chamomile.

Lancet, Nov. 23, 1844, *p.* 253.

The principle of cure by perspiration has not met with much favour, of late years, from those who profess a clinical authority in the treatment of rheumatic fever. Its simplicity ill accords with the impatient violence and affected combinations of modern therapeutics; yet of constitutional methods of cure, no one, by long practical experience, has been more thoroughly approved. Exception has been taken to the rheumatic sweats, that, by them, the local suffering is not relieved. Certainly, in the majority of cases, they are not followed by any immediate diminution of the pain; but it should be remembered that, with the pain, they, (the sweats) are essential to the safe and regular development of the constitutional disorder. Like the arthritic inflammation, they are important in their series and by recurrence, and are not the less salutary in not being severally critical. To secure effects, by perspiration, in this disorder, diaphoretic medicine has been prescribed in every variety of form and combination. Opium, antimony, ipecacuanha, ammonia, have been unsparingly added to the system, already tasked by an active disturbing principle to its utmost means of resistance. Hence, from undue haste, violence, and inconsistency of action, a great loss of the credit which would otherwise have attached to the sweating practice in rheumatic fever. There is but one way in which the vital fluids can be determined, without change and in quantity, to the skin. By the improved hot air-bath, while nothing is added to the blood, we obtain from the surface the greatest possible amount of excretion. In absolute power over the fever of acute rheumatism, by the direct control of every symptom, the hot air-bath is superior to all remedial means hitherto employed. The direct sensible effects of its agency are such as to imply the caution necessary for its use. Its demands, by actual waste, are so large, that in weak and empty habits they cannot always with safety be supplied. It affords most relief, when the fever and local inflammation are slow to arrive, and linger in their departure. In a large experience of many years, the hot air-bath has thus repeatedly been found to determine the character, and to limit the duration of this disease. The principle of this great remedy for rheumatic fever is that of action by excretion. And here, by the approved means of cure, is suggested a rational method of prevention. From the skin, by interruption of its excretory functions, the disorder is often known to begin. By the contrived temperature and forced sweatings of the hot-air bath it has, in many instances, been at once subdued; and in those liable to it, it may assuredly be kept very much at bay by daily ablutions, with general friction of the skin, and other habits of thorough personal cleanliness.

Lancet, Nov. 30, 1844, *p* 278.

43.—*Gout treated with Belladonna and Naphtha.* By Alexander Ure, Esq. [J. P., aged 45, moderate and regular in his habits, but of late rather sedentary, was suddenly attacked for the second time with gout, which commenced in the ball of the great toe of left foot. An ointment composed of one part ext. belladonna, and eight of cerate, was ordered to be applied with gentle friction over the affected part, and five grains each of blue pill and colocynth to be taken at bed-time. By this treatment the pain was dulled, but the toe remained swollen and dusky red. He was then ordered "To use mineral naphtha as an embrocation. Derived direct benefit from pencilling over the part with naphtha; the pain, redness, and swelling, were wholly removed. He recovered.

This case is adduced in order to show the efficacy of rectified coal naphtha in the subacute form of gouty inflammation.]

Med. Gazette, March 21, 1845, *p.* 787.

44—*Terchloride of Gold as an outward application in Rheumatic-Gouty Affections*, made into a salve with lard, has been recommended by Dr. Wilczewski. It is said to relieve the pain, often in a truly wonderful manner. The purple stains are speedily removed by washing the part with a little urine; a fact that was discovered by accident.—*Medicinische Zeitung.*

Medical Gazette, March 7, 1845, *p.* 751.

45.—*On Benzoic Acid.* [In a paper read by Dr. Garrod to the Medical Society of London, the following practical deductions are drawn respecting the administration of benzoic acid:—]

Benzoic acid is of no service when given with the same purpose for which it was originally proposed—viz., for preventing the formation of gout stones, or tophaceous deposits, for these consist of urates of soda as their chief constituent; and as benzoic acid has no influence in preventing the formation of this acid, or in destroying it when formed, it cannot prevent these deposits. The same may be said with regard to its use in cases of uric acid diathesis, where calculi of this substance are apt to be formed. Dr. G. has repeatedly tried the effect of this acid in such cases, but without the slightest benefit: it is very likely to produce a deposition of uric acid by rendering the urine very acid, and thus causing the uric acid to be set free, and rendered less soluble. The property that benzoic acid has of causing the urine to become more acid, seems to be one of its most useful qualities. It causes the urine to become slightly irritating, and when given in cases where there is a deposition of a granular kind of mucus mixed with the phosphates, it is often very efficacious.

Dr. Golding Bird said, that he had long ago ascertained that the idea of benzoic acid being a chemical remedy for gout, by converting uric into hippuric acid, was quite a mistake; and the experience of Drs. Addison and Barlow had fully confirmed him in his opinion. Benzoic acid, by combining with the azotised and effete elements of the blood, and forming hippuric acid in the urine, might be of benefit in some forms of uric acid deposits. It was utterly valueless as a remedy in phosphatic deposits; it was often of service in cases of catarrh of the bladder, but not from any chemical influence it exerted, its action being purely physiological. It had been long known to have a powerful influence on the skin and mucous membranes. With respect to the case related by Dr. Garrod, in which the urine was remarkably full of hippuric acid, he (Dr. Bird) had heard of no similar case, and only one in which it existed in any quantity from the mere ingesta of vegetable food; this case was related to him by Professor Liebig himself. The patient was an hysterical girl, and ate a large quantity of apples: the urine was alkaline, and contained hippuric acid. He had confirmed, by experiment, a statement lately made by Liebig, that lactic acid was not to be detected in urine; that which had been mistaken for lactic acid, had as yet received no name, but was a highly azotized carbonized material.

Lancet, Nov. 16, 1844, *p.* 240.

46.—*On the Use of Sulphate of Manganese in various diseases.* By R. H. Goolden, M.D., F.R.C.S., &c. &c. [In Retrospect X. Art. 49, we noticed a paper by Mr. Alex. Ure on the treatment of gout by sulphate of manganese, in which he states that this salt seems to have a peculiar action in exciting the secretion of bile, whence he proposes to call it a cholagogue. This paper, published in the Medical Gazette, called Dr. Goolden's attention to this salt, and under the impression that it may make a useful addition to the Pharmacopœia, and claiming no further merit in its introduction than an honest desire to test the truth of Mr. Ure's suggestion, by his own experience, he publishes the results of his experience in its use.]

When taken upon an empty stomach, in doses of one or two drachms, it has invariably produced vomiting in less than three hours, and generally within an hour; and the matter vomited has consisted of a very large quantity of yellow bile. After a meal, the same effect has taken place, but not invariably.

It very rarely acts as a purgative alone, and after it has been exhibited for several days, I have often been obliged to have recourse to other purgative medicines, in consequence of the want of action of the bowel. After the first dose it seldom acts as an emetic. The appetite has invariably increased during its exhibition, and when the first emetic effect has subsided the patient is free from all uneasy sensations, and expresses himself lighter and easier than before.

It sometimes leaves a bitter taste in the mouth, which is all that is complained of until the patients vomits.

The stools, which are sometimes dark coloured, soon become yellow and loaded with healthy bile; but if its use be continued for four or five days, they become lighter, and at length shew a total absence of bile, appearing like jaundiced stools of the colour of parchment, but there is no jaundice either in the skin or urine.

If the medicine be discontinued, the yellow colour of the stools returns.

In one case which was admitted into the Dreadnought with jaundice, and which subsequently died from inflammation of the spleen, with tubercular deposit in that organ, the jaundice very much subsided under the use of the medicine. The liver was healthy, but paler than natural; the gall-bladder quite empty, and the spleen very much enlarged, softened, and loaded with huge masses of tubercles.

A few cases are subjoined illustrative of the action of the medicine. The first was a man, æt. 34, admitted for periosteal pains, with large nodes: treated with iodide of potass and opium. Had taken large quantities of mercury in the West Indies for liver disease. After taking his medicine fourteen days, all pains left him excepting in the right shoulder, for which he was blistered, and an issue was applied without effect. Under the idea that the pain was connected with the liver, he was ordered—

ʒ ij. of manganesiæ sulphas in oss. of water in the morning.

He vomited a quantity of pure bile afterwards, and the pain in the shoulder completely left him.

The patient in the second case was a lady who had suffered upwards of three years from derangement of the liver and bowels.

When not taking medicine, the bowels were confined, and the evacuations dark coloured and scybalous. She had suffered at times from pains like those produced by the passage of gall stones, yet none had ever been seen, though carefully looked for. She had been jaundiced four times, always after taking opium. She had occasionally had severe rheumatic pains in the muscles of the chest and abdomen, with lithate of ammonia deposit in the urine. The lithic acid diathesis is constitutional. The treatment adopted was gentle aperients, as senna with magn. sulph.; Pulna water, &c., and occasional doses of calomel and blue pill, sometimes repeated till bilious stools were procured. Nitro-muriatic acid as a wash and given with bitters; salicine however was found to be the only bitter that did not derange the stomach. Vinum colchici in sol. magnes, bicarb was given with marked benefit, but having once caused an inflammatory state of the bowel, Dr. Goolden was unwilling to recur to it.

After two very severe paroxysms, for which carb. sodæ in warm water was given, followed by gr. v. doses of calomel, with other aperients, which caused great suffering by the prolapsus brought on. Dr. G. after some days ordered—

ʒ ij. of Manganesiæ Sulph. in ℥ iv. of water to be taken in the morning.

In about half an hour afterwards she vomited Oj. of pure yellow bile, and during the day had three copious motions, the last two of which were quite yellow. I saw her in the evening, when she said that all her uneasiness had left her, she felt in good spirits, and had a good appetite. The manganese was repeated in smaller doses of ʒ ss. twice a-week for a few weeks; no sickness followed. She left town for the sea-side, and has had no return of her bilious attacks since, and is considered by herself and friends to be in good health.

We must not here attribute too much to the effects of the sulphate of manganese, as the patient had been improving in health for some time previously; but the immediate effects of the drug were clearly marked, in producing the copious flow of bile, which calomel had failed to do, and it is to be observed that no mercurial had been given for three days previous to the dose of manganese.

Medical Gazette, Feb. 14, 1845, *p.* 646.

47.—*Effects of Miasma.* By John C. Smart, M.D., Scarborough. [Whilst the opinions held respecting the doctrine of miasma are in such an unsettled state, any cases which may tend to settle this dispute are of great personal value. Dr. Smart communicates the particulars of two such cases, which certainly seem to favour the doctrine.

The first, a strong robust maid-servant at a farmer's house, when labouring under diarrhœa, caught a severe cold, which ran on to a moderate degree of fever, with incoherency of speech, accompanied with tetanic spasms of the muscles of the lower jaw; pulse 115, hard and full; tongue loaded with brownish fur. She recovered in a fortnight under active antiphlogistic treatment.

The patient, in the second case, was a servant in the same house, who, a fortnight before she was taken ill had drunk copiously of cold water, at a time when the menses were upon her: she complained suddenly of a pain in her little finger, which rapidly extended, and she fell from a chair in which she was sitting and lay on the floor insensible; violent convulsive action of the voluntary muscles ensued. The rest of the symptoms were the same as in the former case, and under a similar plan of treatment she soon recovered. Dr. Smart was told that two other servants had been attacked in the same manner, one of whom died. Dr. S. says,]

The foregoing cases, viewed separately, would excite but little attention; yet, recurring as they did, year after year, at a season when vegetable decomposition is most rife, it became necessary to investigate the cause, and take some precaution against it. A few yards from the kitchen door was a pool, fed by water that percolated through the manure of the fold-yard: this the farmer told me had existed during two or three generations, and nothing had ever been laid to its charge; however, I advised him to drain it off, with which he complied; and up to this time [November, 1844] no more cases have occurred.

It will be observed that the spasmodic action was confined to those muscles moving the inferior maxilla, and the muscles of the pharynx, in Hart's case. In the others, although there was well marked and painful constriction of the pharynx, the whole system of voluntary muscles was violently excited, and in two of the cases required great force to control them, and present mischief arising from the extraordinary exertions made by the patient; which was considerably mitigated by a liberal abstraction of blood, but not entirely subdued, until the secretions were freely promoted by the potassio-tartrate of antimony, combined with chloride of mercury.

Since it may seem extraordinary that the servant-maids alone should be attacked, whilst the remainder of the family enjoyed immunity from a disorder, which there is reason to suspect arose from miasm, created by the decomposition of vegetable or animal matter in the abovementioned pool; I may add that the mistress of the house, mother of a large family, was always distinguished for her activity up to the year 1837, when her previously good health and cheerful disposition gave place to anxiety, inaptitude for any mental or bodily exertion, and disorder of the digestive organs, for which medicine only afforded temporary relief. The ordinary period of gestation was curtailed by miscarriages, three of which occurred between 1837 and 1840, and were attended with considerable difficulty and danger. In 1841, the year after the pond had been filled up, she recovered her former vigour, again became pregnant, and was delivered of a fine child at the full period, and has enjoyed good health ever since.

A retrospect of several years' extensive practice, in an agricultural district, brings to my recollection many instances, where whole families have been prostrated by a fever, that I strongly suspect was engendered by allowing the refuse of cattle-folds to decompose in heaps, collected close by the dwelling-house, and saturated with a fluid that ought to have been drained off and collected in a tank, thus forming a most valuable manure to enrich the soil, instead of being the means of introducing sickness into the household of the farmer, and often severing his nearest ties.

Provincial Medical and Surgical Journal, Dec. 4, 1844, *p.* 560.

48.—*Use of Calomel and Cold Affusion in Typhus.* By JOSHUA BURGESS, Esq. Typhus is the typification of disease of membranous tissues, beginning with the pituitous membranes: the serous and mucous linings of the large cavities; the mucous linings of the alimentary, gastric, and intestinal canals; the epithelium; and, above all, the skin—the extensive covering of the surface of the body: all being more or less implicated, directly or indirectly, in the progress of typhus.

The great extent of membranous tissues, beyond all others, in the animal organization, their important and almost universal function, and their singular sympathy in health, disorder, and disease, sufficiently explain the inveteracy of the character of typhus.

If it be assumed that the great mucous surfaces, intercluding the skin, so universally expanded over the external and internal parts of the animal structure, in and through which transpiration, exhalation, absorption, secretion, and sensation are so wonderfully performed, are the seats of disease in typhus, the remedial agency of calomel and cold affusion is not difficult of solution.

[When the disease advances, the vital powers become nearly subdued, and]

Neither mild nor temporizing remedies will rouse the slumbering functions; an impulse must be speedily obtained, directly, through the vascular system, and indirectly, over the ganglionic and cerebral functions: this is the best obtained by large doses of calomel, aided and succeeded by cold affusion.

Calomel, in large doses, acts proximately as a sedative, without losing any of its well-known valuable qualities as an alterative, upon the absorbent and glandular structures. The first good it produces, is sound, calm, undisturbed sleep, to which the patient has been long a stranger, during which the ganglionic, absorbent, and glandular systems are silently invaded by its alterative agency; the intestines become filled with secretions, ready to be removed by any mild cathartic, (e. g. small doses of neutral salts,) exhibited periodically and regularly, to make them patent: the dose of calomel should be renewed every night, (without any other medicine, only the neutral salts in solution with infusion of senna and the mindererus' spirit,) and repeated till the functions approach their normal state. The cold affusions over the naked surface of the body are to be practised daily, by throwing over it, while in a sitting posture, a bucketful of cold water, during the acme of the febrile paroxysm.

The breathing becomes more free, and the stertor, so frequently present, gradually subsides; the pulse, from having been oppressed and feeble, yet quick and wiry, becomes compressible, free, and bounding, increased in volume, and diminished in frequency; the peculiar expression of countenance, now collapsed, anxious, and cadaverous, with a cold, lead-like, lack-lustre, expression, the eye injected, and the sardonic grin and incoherent mutter quivering on the lip, also subside; the subsultus tendinum and picking of the sheets also cease, and a profuse sweat pervades the surface, the skin becoming relaxed, soft, and elastic, and its temperature gradually restored to a uniform healthful and natural condition.

If cold affusion be supposed to have no specific agency—which I nevertheless think it possesses—in stimulating and strengthening the capillary and exhalent vessels, and the vascular and nervous systems, thus giving tone to the function of the heart, equalizing the circulation, and removing congestions, it at any rate possesses that quality which has been already so successfully excited in the gastro-enteritic systems—of washing away and effectually removing morbid secretions—of opening the mouths of the exhalents, and restoring transpiration, so long interrupted, and which very probably has acted as a remote cause of disease.

One of the phenomena attending the results of this practice is the wonderfully increased action of the absorbent system: the absorbents appear to become rapacious and greedy: and when, from their previously impaired state, effusions or morbid deposits in the tissues have taken place, this increased action becomes singularly developed in their rapid removal.

The ascaris lumbricoides very commonly infects the intestinal and alimentary canals in typhus, as also in the infantile fever of children, when the slimy secretions are in both instances characteristic of the attendant disease, and in both of which their expulsion, creeping away, is the harbinger of recovery.

The mercury remains too short a time in the system to produce any specific irritation, or hypercatharsis; the intestinal canal, having long been torpid and insensible, renders the calomel comparatively inert as a cathartic, covered as it and the whole of the alimentary passages are with slimy mucus, and its sedative influence on the ganglionic system passively producing profuse secretions, the passages become a vortex, render potent by the epsom, glauber's, or other neutral salts, the natural sensibility of the passages being only perfectly obtained after the necessity has ceased for the administration of the large doses of calomel, and the whole quantity of calomel taken has been detected again in the stools, ("partly as sulphuret of mercury,") and from its difficulty of solution no doubt can exist of its being in this state wholly rejected in the stools, although in its progress it has produced decided and important results.

Lancet, Nov. 16th, 1844, *p.* 218.

49.—*Treatment of Typhus.* By William Davidson, M.D., late Senior Physician to the Glasgow Royal Infirmary. [In a long and interesting paper on this disease, including "its complications and an estimate of the various therapeutical means employed for its cure," Dr. Davidson gives the following summary:]

1. That as typhus is a disease which cannot be checked *in limine,* and is often tedious in its progress, causing great emaciation and exhaustion, we ought not, without very strong and special reasons, to employ any measures which may vitally lessen the powers of life, such as bleeding, vomiting, and excessive sweating or purging

2. The ordinary measures may be the following:—Place the patient in a large, well-ventilated apartment, on a mattress with few bed-clothes, let the head be shaved, and kept cool with an evaporating lotion, give a gentle purgative every second or third day, let the skin be bathed once or twice a-day with tepid water, and this may be accompanied with small doses of tartrate of antimony, antimonial powder, or ipecacuhan. His drink should be light, cooling, and slightly diuretic, and his diet nutritive, but light, and little liable to ascescency. When there is a tendency to congestion in any organ, a little calomel or hydrargyrum c. creta may be combined with the purgative, or calomel, with a small portion of opium, may be given every six or eight hours. The application of two or three leeches to the temples or nostrils is often useful in congestion of the brain, and also when there is intense headache, which is often the forerunner of delirium. Blisters are also often advantageous in such cases. Derangements of particular functions, or symptoms arising from idiosyncracy of constitution, sometimes occur, and must be treated accordingly.

3. Mercury in small doses is frequently used in promoting several of the secretions, and in relieving the congestions of internal organs.

4. Opium is injurious in a large proportion of cases, from its tendency to cause congestion in the head; but when diarrhœa is a symptom, it ought to be administered with a view to check the exhausting evacuations.

5. Wines and other alcoholic liquors, as they contain both stimulant and alimentary elements, are the most to be relied on for supporting the strength; and are the least injurious. The pulse, taken along with the general symptoms of exhaustion, ought to be the rule for its exhibition, both as to time and quantity.

6. Ammonia, camphor, quinine, and other similar tonics, are not to be depended on in bad cases; and, when exhibited along with wine, frequently cause the patient to refuse both,

7. When the disease is complicated with local affections in the head, chest, or abdomen, these must be treated on the same general principles as the idiopathic disease, which they represent; with this important modification, that evacuations of all kinds must be employed more sparingly, and with much caution; and that even in these cases, if there be much prostration of strength and a very weak pulse, wine must be administered, although more moderately than in the simple disease.

Lond. and Edin. Monthly Journal of Medical Science, Dec. 1844, *p.* 1020.

50.—ON THE MEDICINAL PROPERTIES OF BEBEERINE, A NEW VEGETABLE ALKALOID.

By Douglas Maclagan, M.D., F.R.S.E., &c.

[A very great improvement has been effected in the manufacture of bebeerine for medical use, by Mr. J. F. Macfarlane and Mr. Brown, of Edinburgh, and it is now made at 6s. the oz., which is less than half the price of sulph. quinine.

In adducing further evidence of its value, beyond what was given in Dr. Cormack's Journal for August, 1843, Dr. Maclagan confines himself to testimonies which he has received from others, and states that he has found no reason to alter the opinion given in his former paper, as to its value as an antiperiodic and tonic, and consequently of its efficacy as a substitute for quinine.

Dr. Watt, of Georgetown, Demarara, whose first series of cases Dr. M. published, in 1843, has made further trial of the remedy in various cases. The first was a case of quotidian in a female. After a dose of calomel and jalap, she was ordered twelve grains of bebeerine in the evening, to be repeated at six the following morning. She did not take the morning dose, and fever and ague came on at 10 a.m. as usual. The same dose was taken night and morning, until she had had a drachm altogether. Six months after there had been no return of the fever.

The second was a case of tertian also occurring in a female. She was ordered ten grains of calomel and twenty-five grains of jalap immediately, and twelve grains of bebeerine at bedtime. The next day the dose of bebeerine was repeated, morning and noon. Six months after she had had no return.

Dr. Watt remarks that if, as he thinks there is reason to believe, bebeerine is equally efficacious with quinine, it is superior to the latter from its not affecting the head, or causing irritation of the stomach or cold sweat, and mentions a case where ninety-six grains were taken in three days and a half, a quantity of quinine he would never have ventured to give in the same time. He thinks, however, that bebeerine is tardier in its effects than quinine, and thinks it may perhaps be accounted for by quinine acting more immediately on the nervous system, and bebeerine on the blood; and asks if we may not, therefore, expect it to be more permanent in its effects, and instances the slow but durable action of arsenic in ague, and the more speedy as well as more transient effect of quinine, in support of this hypothesis. It appears also to have a gentle cathartic action. To prevent disappointment, it is important to know that one paroxysm does sometimes come on after the exhibition of a full dose, but so far as Dr. Watt's experience yet goes no second paroxysm.

Five cases of regular uncomplicated intermittent fevers in the hospital at Kamptee were considered favourable for testing the antiperiodic virtue of the sulphate of bebeerine. On these cases, Dr. Anderson remarks:]

After the functions of the stomach and bowels had been regulated by an emetic, mild mercurial, and aperient medicine, the time of the paroxysm being known, the sulphate of bebeerine was ordered in three grain doses hourly, till from eighteen to twenty-four grains were taken. It was managed so that the last dose was taken immediately before the expected return of the fever. In the two cases in which the bebeerine did not prevent the paroxysm, the sulphate of quinine was substituted for the bebeerine, for the purpose of contrasting the effects of the two remedies.

In the cases of Doyle and Fitspatrick eighteen grains of the sulphate of bebeerine prevented the return of the fever. In that of Lowther, although the same quantity did not have a similar effect, the paroxysm that followed was later in appearing, and milder than those that preceded it, and on the next expected recurrence of the fever twenty-four grains were given with perfect success. In these three cases the antiperiodic power of the bebeerine was fully equal to what I should have expected from the sulphate of quinine similarly administered.

In the case of Murphy twenty-one grains of the bebeerine were insufficient to prevent the coming paroxysm, which, however, was slight and postponed. The same quantity of bebeerine was repeated before the next paroxysm, but contrary to expectation it returned at an earlier hour, and was more severe than the previous one. Quinine was then substituted for the bebeerine, and twenty-one grains similarly administered were followed by recovery.

To the woman Doherty twenty-one grains of the sulphate of bebeerine were given, without any marked influence on the fever, while the same quantity of quinine, subsequently given, had to be repeated before it prevented the return of the fever.

From these cases I infer that the sulphate of bebeerine possesses considerable antiperiodic power, and although inferior to, it is likely to be a valuable substitute for the sulphate of quinine. The bebeerine neither excited the circulation nor affected the head.

[These cases are communicated by J. Anderson, M.D., and D. Falconer, Surgeons to the N. S. Force.

Dr. Bennett communicates a case in which bebeerine was tried, where the constitution had long suffered from intermittent. The man complained of asthma and bronchitis, and the intense form of intermittent under which he laboured, but for the enlargement and induration of the spleen as discovered by percussion, would never have been suspected. After the pulmonary symptoms had subsided, ʒj of sulph. quinine was given on two occasions twelve hours before the attack. The first time a slight effect was produced, the second time none.]

I then determined to try the sulphate of bebeerine, but previously watched an attack of the fever, when no drug whatever had been given. On this occasion the shivering was very violent, and the cold stage continued three-quarters of an hour; and hot and sweating stages were prolonged to between two and three hours. Fifteen grains of the bebeerine were given daily during the interval, in three doses, and ʒj. every third day, when the attack was expected. The first attack experienced after this treatment was adopted was of the same duration, but much diminished in severity. In the second attack, the cold stage, instead of lasting 45 minutes, continued only 25 minutes. In the third attack it continued 20; in the fourth, 16; in the fifth, 15; in the sixth, 13; and in the seventh, 8. At this time he left the hospital, and has never returned. I much regret that the spleen was not again percussed before his departure.

The action of the medicine appeared to me in every respect similar to that of quinine. The relative power of each, of course, is only to be ascertained by more extended trial. But so far as their actions as an antiperiodic and as a stimulant are concerned, they appear to me to be identical. The same congestion of the brain was experienced in the above case after taking ℈j. doses of both drugs. Indeed, from what I have observed of its therapeutic effects in this instance, I have no doubt that bebeerine possesses all the valuable properties of quinine in an equal if not a superior degree.

[Professor Simpson having made a pretty extensive trial of the remedy in periodic neuralgia, occurring during utero-gestation, in which neither quinine nor arsenic are applicable, communicates his results as follows:]

I prescribed it about a couple of months ago to a lady who had one of the most severe attacks of forehead and face neuralgia that I remember to have seen. It came on towards noon, and kept her in blindness and agony for some time. The ordinary medical attendant on the family had leeched her, &c., without relief. I advised the bebeerine to be given in two grain pills repeatedly during the interval between the paroxysms. As the medicine seemed to have no effect I gradually increased it, till on the third day she took about half a drachm of the sulphate during the fourteen or sixteen hours' intermission. To tell you the truth I was beginning to despair of seeing the sufferings of my patient in any way relieved by it, and would have changed it for some other remedy next day, but such change was not required, as, after the large dose I have mentioned, the usual fit was greatly less in severity, and in a day or two entirely disappeared. Of her own accord my patient fell back upon the bebeerine pills some time afterwards, when the neuralgia was again threatened, and it again speedily disappeared.

I have a lady at present under my care, who, after miscarrying twice in the country, has been suffering from distressing pains in the face, shoulder, and other parts of the body. Before I saw her she had been put on the use of guaiacum, colchicum, &c., under the supposition that the pains were rheumatic. They occur with a kind of irregular periodicity. The patient at the same time suffers from menorrhagia. Quinine, arsenic, &c., have failed to relieve her. Latterly, I placed her upon the use of the sulphate of bebeerine, and at my last visit she stoutly declared that she had derived far more benefit from this medicine than from any others that I had previously prescribed for her. The pains have returned as usual, but are much less severe in their character, and manifestly diminishing in intensity.

In other cases where I have employed the bebeerine, either as antiperiodic or as a tonic, it has appeared to me to have caused far less of those irritating and stimulant effects which we see in some constitutions to be produced by the use of quinine.

Edinburgh Medical and Surgical Journal, April 1*st*, 1845, *p*. 360.

51.—ON A NEW PREPARATION OF CINCHONA BARK.

By M. Donovan, Esq , Dublin.

[Mr. Donovan shews the great discordance amongst authors as to the best preparation of cinchona, and proceeds to describe a new form of exhibiting this medicine.]

On considering (he says) the facts and opinions adduced, it will probably appear to the reader that sulphate of quinina is not the representative of *all* the virtues of bark. The adoption of the former, in a great measure, to the exclusion of the latter, may have arisen from the want of a preparation of bark comprising, in a small dose, all its active principles. The alcoholic menstruum renders the tincture objectionable. Decoction in water takes up but a small ratio of the active ingredients; cold infusion still less. In the watery extract the proximate principles are said to have undergone injurious changes.

Under the impression that an agreeable preparation containing all the virtues of bark in a small bulk, would be of use, I applied myself to the consideration of the subject. M. Guerette and others have shewn that yellow bark, after it has apparently yielded every soluble ingredient to water, retains more than two-thirds of its alkaloid. I found that it required to be boiled for fifteen minutes, in ten successive portions of water; each portion being eight times the weight of the bark, before the whole bitterness was extracted. But the attempt to concentrate so large a volume of liquid by evaporation, proved that the bitterness and astringency of the resulting liquor were less than what would have been expected; some other method was therefore to be sought.

I accordingly made a tincture of yellow bark with proof-spirit; decanted it, and strongly pressed the residuum: a second tincture was drawn from the residuum in like manner. What remained was boiled thrice successively with small quantities of water; the decoctions being pressed out by the screw-press. The decoctions were evaporated to a small volume; the tinctures were distilled to one-third, which, being now almost a watery solution, was mixed with the decoction.

Further concentration was to be obtained, but without the agency of fire. The liquor, prepared as above, consists of kinate of quinina, tannin, kinate of lime, and some other principles. The kinate of quinina is the most important of all, and by increasing its quantity, we might virtually concentrate the liquor, but for the great expense and trouble of preparing that salt from its constituents. Fortunately there is an easy method of attaining the end, by converting the dikinate′ of lime, naturally existing in cinchona, into kinate of quinina, by adding oxalate of quinina to the decoction: the oxalic acid seizes on the lime, producing an insoluble oxalate, which precipitates, while the kinic acid and quinina form the salt required, which remains in solution. Thus the object is easily and completely accomplished.

To obviate the perishable nature of this liquid, it must be converted into a syrup—a form in which the active principles are not only preserved, but some of them are held in solution, which otherwise they would not be: for a highly concentrated decoction of bark, although transparent while hot, is charged with a deposit when cold. But if a sufficiency of sugar be dissolved in it, the syrup remains permanently transparent, and free from deposit.

This syrup, like others that are much loaded with vegetable matter, has a tendency to crystallize; and against this inconvenience I found a remedy in gum-arabic, a portion of which is, therefore, to be used in place of its equivalent in sugar.

In this preparation distilled water must be used, to avoid the waste of oxalate of quinina, which salts of lime, contained in common water, would occasion,

All syrups loaded with vegetable matter are liable to *mothering;* to keep them in small bottles perfectly full, and in a cold place, is an adequate mode of prevention.

Although quinina exists in bark in the state of dikinate, a portion of that salt is decomposed in the liquid preparations by the tannin present. But bitannate of quinina, a salt insoluble in mere water, is held dissolved in this syrup, as is evident from the intense colour which salts of iron strike with it: the tannic acid contained in bark is of a peculiar kind, and different in its properties from the common.

The following are the quantities of materials to be employed, and the calculations of the result:

Let eight ounces of yellow bark, in coarse powder, be digested with a pint of proof-spirit for a week, in a close vessel, with frequent agitation. The tincture is to be fully extracted by the screw-press; the residuum is to be digested with another pint of proof-spirit for a week, and the tincture again expressed. The residuum is now to be boiled for half an hour with a pint of water, and the decoction strongly pressed out. The boiling of the residuum a second and third time with a new pint of water is to be performed in the same manner; and then the three decoctions, mixed, are to be evaporated by heat to eight ounces. It will be much better if this be done in a vacuum. The tinctures, mixed, are to be distilled or evaporated until eight ounces remain; and these, still boiling hot, are to be added to the evaporated decoction. A pint of liquid will thus be produced, the chief ingredient of which is dikinate of quinina. Its quantity may be determined as follows:

In one French pound (7559 troy grains) of yellow bark furnish, on an average, 200 troy grains of hydrous disulphate of quinina, containing 143·62 grains of anhydrous quinina, this last, while existing in the bark as dikinate of quinina, must have been in combination with 78·43 of dry kinic acid; the amount of dry dikinate of quinina in each French pound of yellow bark being thus 227 troy grains, or 115·34 grains in eight troy ounces, namely, the quantity from which the above-mentioned pint of bark liquor was procured.

The other ingredient of which notice is here to be taken, is kinate of lime. The quantity of this in eight ounces of yellow bark, and, therefore, in a pint of bark liquor, will be 268·8 grains, when the bark contains seven per cent. of this salt, as it ought. Now 268·8 grains of hydrous kinate of lime, consist of—

Anhydrous kinic acid . . .	14·973 grains.
Lime	24·52 „
Water	94·55 „
	268·8

And 24·52 grains of lime require for saturation 31·53 grains of anhydrous oxalic acid, which would be furnished by 315·31 grains of anhydrous dinoxalate of quinina—this last salt consisting of 31·53 grains of anhydrous oxalic acid (equal to 55·17 of crystals), combined with 283·78 of anhydrous quinina.

The result of the double composition of 268·79 grains of crystallized kinate of lime by 315·41 grains of anhydrous dinoxalate of quinina, would therefore be 56·05 grains of insoluble oxalate of lime, and 433·51 grains of anhydrous dikinate of quinina, thus—

Anhydrous kinic acid . , .	149·73 grains.
Anhydrous quinina . . .	283·78 „
	433·51

Thus, by adding 315·31 grains of anhydrous dinoxolate of quinina to the pint of bark liquor above mentioned, containing 263·8 grains of native kinate of lime, we produce 433·51 grains of dikinate of quinina. And as that liquor naturally contained 115·34 grains, as already shown, the total quantity of dikinate of quinina is now 548·85 grains in the pint of liquor produced from eight ounces of yellow bark.

Having therefore added 315·31 grains of anhydrous dinoxalate of quinina (or rather its component parts, already estimated above) to the pint of bark liquor, and boiled for a few moments, the liquor is to be made into a syrup by adding twenty-one troy ounces of refined sugar, and four ounces of best gum arabic, both in powder, and previously mixed. The whole is to be kept stirring until solution be effected: and if the resulting syrup, when cold, do not amount to thirty-two ounces measure, that quantity is to be obtained by the addition of water. When cold, the syrup is to be filtered through flannel, which is the best filter for syrups; what remains on the filter is inert matter.

In each ounce measure of this syrup, there are 17·15 grains of anhydrous dikinate of quinina. To compare this strength with that of common decoction of bark, we have only to consider that, if two ounces of yellow bark be boiled in thirty-two ounces of water, and that the whole dikinate of quinina were thereby extracted, the quantity would amount to but 28·83 grains, whereas in an equal measure of the syrup there are 548·85 grains—that is, the syrup is nineteen times stronger than the decoction. But as the whole active matter of the bark is not extracted, the syrup is still stronger. By sweetening the decoction equally to the syrup, the latter previously diluted with the quantity of water equivalent to that contained in the decoction, I found by the taste that the syrup is about thirty times more bitter than the decoction. Hence, one drachm of syrup is equal in power to about three ounces and six drachms of the decoction; and it would be also equal to the 113 grains of bark in substance from which the decoction is obtained., but that the whole of the active matter is not extracted in boiling. As one drachm of syrup contains 2·144 grains of dikinate of quinina; and as that quantity of the salt is contained also in 71·4 grains of bark, it follows that one drachm of syrup is equal to three ounces and six drachms of decoction, and to 71·4 grains of powder of bark.

To facilitate calculation, I have hitherto supposed that *yellow* bark was to be employed for this syrup. It has been already shewn in this essay that in the opinion of good judges, cinchonina is equal to quinina as an antiperiodic. Red bark contains both of these alkaloids, often in equal quanties, along with a much greater ratio of that highly important medicinal agent, the peculiar tannin of bark, than is found in the other species. It was, indeed, long ago accounted the best of the barks by Dr. Saunders; and Dr. Skeete proved that it imparted more of its virtues to menstrua than any other. A syrup prepared from red bark will contain all the virtues of the three barks, and perhaps in a greater degree than a syrup made from the other two conjointly: some might prefer a mixture of red and yellow barks in equal quantities

It remains to offer a few suggestions relative to the pharmaceutical employment of this syrup. In general it may be used in any mixture of compatible liquids, when the powers of bark are required, and when the other liquids are already sufficiently voluminous, and would be altogether too bulky if decoction of bark were employed. Thus, in the simultaneous exhibition of decoctions of bark and sarsaparilla, in equal quantities, the smallest efficient dose of the mixture is six ounces three times a-day. By altering the formula to fifteen and a half ounces of decoction of sarsaparilla, and five and a half drachms of syrup of bark, the same powers are exhibited in half the foregoing bulk.

Hitherto there has been no way of exhibiting bark in its full powers, except in the state of powder, which to most persons is so disgusting a dose that it is rarely prescribed. The following contains all its energy in a state of perfect development and activity, and is a pleasant carminative tonic.

Cinnamon water, six ounces and a half; syrup of bark, half an ounce; compound tincture of bark, an ounce. An ounce measure of this mixture is equivalent to forty-two grains of bark in substance.

When bark and iron are indicated, the following is the formula in which the least chemical action takes place between the tannin and the iron, as no discoloration appears for several days.

Precipitated carbonate of iron, syrup of bark, of each an ounce. Mix. Dose, the size of a small nutmeg.

The strength of this syrup is such, that one drachm is a full dose, either by itself or in water. Aromatics, such as anise or fennel, are said perfectly to mask the bitterness of preparations of quinina. M. Pierquin says, that thirty-two grains of carbonate of magnesia conceal the taste of six grains of sulphate of quinina without interfering with its virtues.

To conclude, this preparation of bark seems deserving of the attentive consideration of physicians, as it contains all that is valuable in that medicine, in a state of perfect preservation and full energy. It presents the active ingredients exactly in their natural state, which good judges have declared to be, in many forms of disease, absolutely necessary. It contains nothing but what is an unaltered proximate principle of bark. The form is commodious, not liable to spoiling, is less disagreeable than any other, and may be rendered even agreeable —*Pharmaceutical Journal.*

Dublin Journal of Medical Science, Jan. 1845, *p.* 505.

52.—*Sulphate of Iron, with an Alkaline Carbonate, an Antidote for Prussic Acid.* By Messrs. T. & H. Smith, Edinburgh. [Messrs. Smith recommend that in cases of poisoning by prussic acid, the first thing to be done should be to give a large dose of either caustic or carbonated magnesia, in order to neutralise the effects of the free acid, which is almost invariably to be found in the stomach, and which interferes with the action of the remedy they propose. This consists of two substances: the first, a salt of iron, of the same constitution as Prussian blue, and which is readily prepared by the following process:—]

Seven parts of protosulphate of iron, say seven half-drachms are required, four of which are to be formed into persulphate. This is done by adding to the solution a quantity of sulphuric acid equal to the half of what it already contains—which for two drachms would be twenty-three grains of acid of the density of 1.845—and at a boiling heat, adding, at short intervals, small quantities of nitric acid, till red nitrous fumes cease to be given off. The liquid is then to be evaporated in a porcelain basin to perfect dryness, by the heat of a water-bath, stirring constantly with a glass rod, till the excess of acid is thoroughly driven off. The operations will be more quickly finished in a bath of a saturated solution of salt. The perfectly dry salt is then to be dissolved in distilled water along with one and a half drachms of protosulphate of iron, so that the solution may amount to two ounces. This solution will not of itself precipitate prussic acid, but if a solution of an alkaline carbonate be previously added, containing a quantity just sufficient to take all the sulphuric acid from the iron salt, the prussic acid combines instantaneously with the iron, forming the very permanent and insoluble compound Prussian blue. As the solution of the sulphate of iron contains in all nine equivalents of sulphuric acid, the same number of equivalents of carbonate of potash—the alkaline carbonate we use—will be required to seize upon these and produce complete decomposition; it is therefore a very easy matter to determine the quantity of the alkaline carbonate necessary. The equivalent of the carbonate of potash is 69.27, and nine equivalents of this is $69.27 \times 9 = 623.43$. The equivalent of protosulphate of iron is 130; of this, seven equivalents are needed to form a salt of the constitution indicated, therefore seven equivalents are found by multiplying $130 \times 7 = 910$. The relative quantities are consequently 910 grains of protosulphate of iron, and 623.43 grains of carbonate of potash. Now, as the quantity of sulphate of iron given in our formula was seven half-drachms, or 210 grains, the correct quantity of carbonated alkali can be found by the following proportion:—

$$910 : 622.43 :: 210 : 144.$$

Therefore 144 grains is the proper quantity for the exact decomposition of the iron salt; and for the sake of simplicity, we dissolve this in the same quantity of water as the sulphate of iron. As each of the solutions contains exactly 960 minims, which, by calculation, should throw down 56.8 grains of real prussic acid between 17 and 18 minims of each should separate the grain; and as the hydrocyanic acid of the London Pharmacopœia contains two per cent. of real acid, 35 minims of each would be required to precipitate 100 grains of such an acid. The acid of the Edinburgh Pharmacopœia, on the other hand, containing about three per cent., a third more, or about 52 minims of each of the solutions, would be necessary to separate all the prussic acid from 100 grains. It is probably unnecessary to carry the calculation higher, as we suspect that if a larger quantity than 100 grains should be taken, the fatal effect would be so rapid, as completely to exclude the possibility of rendering any available assistance. These are the quantities theoretically necessary, and when pure materials are used, will be found very nearly correct, as tested in an open vessel; but when given as an antidote for the poison, we would recommend not less than three times the theoretical quantity to be given, as from the presence of food, mucus, &c., in the stomach, it is improbable that the antidote would mix immediately with the poison at every point, so that to render the action more certain, a large excess is advisable, more especially as this can be attended with no evil consequences, as the only effect that could follow an excess, would be the formation of sulphate of potash, and an insoluble mixture of protocarbonate and peroxide of iron, which, if active in any way, would, by producing sickness and vomiting, be really in the direction most to be desired.

Pharmaceutical Journal, Feb. 1, 1845, *p.* 373.

53.—*Tests for Opium.* Where opium cannot be detected by the smell, Mr. Taylor prefers the sesqui-chloride of iron as a test, discovering as it does meconic acid in one hundred and sixtieth of a gr. of opium.

It might be supposed, says he, that if, on adding strong nitric acid to a portion of the liquid, a bright red colour resulted, this would be a sufficient indication of the presence of morphia, and therefore of opium: but a serious mistake might be committed in such a case, unless the operator had previously employed the iron test, and determined the presence of meconic acid in the liquid. It is worthy of remark that the nitric acid test, while it destroys the colour given by the meconate of iron, (a dark red,) will bring out, when added to excess to the same portion of liquid, the peculiar bright amber-red tint which it is known to give in a solution of morphia. The tests for meconic acid and morphia may be thus applied to one quantity of liquid.

Mr. Taylor, after explaining the fallacies these tests, and that of iodic acid, may give rise to, next describes some experiments he instituted for the discovery of the smallest quantity of *morphia* which can be detected by each. He found that nitric acid detected one-fifteenth gr. of muriate of morphia, diluted in 300 parts by weight of water; sesqui-chlor. iron detected the one-eleventh gr. in 231 parts of water; and iodic acid the one hundredth gr. in 1300 parts of water. Thus *iodic acid* is by far the most delicate test, discovering as it does morphia in less than one-fifth of a grain of opium; but it is also the one most open to fallacy, and cannot be employed in coloured organic liquids, containing these small quantities. Practically its utility is far less than would be anticipated from the result of experiments upon the pure salts of morphia. Other experiments were performed for the purpose of ascertaining how small a quantity of *meconic acid* need be present in a fluid, to admit of its separation by acetate of lead, and subsequent identification by sesqui-chlor. of iron. No precipitate of meconate of lead occurred when the proportion of meconic acid was less than one-forty-eighth gr., *i. e.*, about 0·34 gr. common opium. Unless, indeed, soluble matter of several grains of opium exists in the liquid for analysis, it will be difficult to obtain meconic acid and morphia separately. The *iron test* for *meconic acid* is far more delicate than any of the tests for morphia, and is much less liable to be interfered with. The one-fiftieth gr. or smallest visible portion of solid meconic acid is easily detected when free, while in solution, in a small quantity of liquid, even one-five hundredth gr. may be discovered. Thus, the presence of this acid may be determined in a liquid from a much smaller quantity than would suffice to form a separable precipitate of meconate of lead; for, while for this latter one-third of a grain of opium is required, less than one-hundredth of a grain suffices for the exhibition of the acid by the direct application of the iron test. The procural of the precipitate of meconate of lead does not increase the certainty of the iron test, but merely enables us to obtain the meconic acid in a concentrated and solid form.

Medico-Chirurgical Review, Jan., 1845, *p.* 76.

54.—*The Dried Bark of the Rhamnus Frangula a substitute for Rhubarb.* So far back as the days of Matthiolus, we find the bark of the Rhamnus Frangula spoken of in the following terms, as "exsolvens, roborans, astringens; quod etiam hydropicorum aquas ducit." He also warns against the use of the fresh bark, as causing severe nausea. By more modern writers it has been styled "rhubarbarum plebeiorum." Within the last eighty years, this valuable, indigenous remedy has been allowed to fall into neglect. The author's attention was first directed to it by finding it the active agent in a nostrum for the cure of hœmorrhoids. Since then he has used it for the last twelve years, in venous, abdominal plethora; habitual constipation, hœmorrhoids, and hæmorrhoidal congestion. It operates both by stool and urine, causing the discharge of a quantity of mucous fæces, and of blood from the vessels of the rectum. On account of its diuretic properties, it has been successfully used in dropsy. The writer has proved its cathartic powers on his own person for the last ten years. The form in which he employs it is the following:—

℞ Corticis desiccatæ rhamni frangulæ, ℥iss
Aquæ puræ Oij
Coque ad octarium. dein adde sub finem coctionis
Cort. aurantii
Sem carui contusor: aa, ʒiij
Admoto decocto adhuc fervente, stet materies donec frigescit.

A cupful of this decoction taken every night usually procures the discharge of several mucous stools. Should it, however, fail to produce catharsis, an ounce of Epsom salt may be added to the quantity of decoction ordered to be prepared at once. Should the dose, directed above, fail to procure stools the morning after its administration, it must be repeated about 11 o'clock a.m. In persons of irritable weakly habits, and those whose constitution is not familiar to the medical man, smaller doses of the decoction than that just mentioned must be commenced with. In chronic constipation, the remedy must be persevered in for some time—seven or eight weeks at least—before the obstruction is completely removed. In the treatment of hæmorrhoids by the decoction of the R. Frangula, the writer prefers adding to the bark two ounces of Achillea millefolium, in place of the usual adjunct of four drachms of orange peel. Such a combination he has found exceedingly useful in the cases above-mentioned; and yet more so, when to each dose of the decoction from thirty to seventy drops of laurel water were added. Should symptoms of hæmorrhoidal inflammation at any time require to be combated, the writer has found the addition of an ounce and half of sulphate of soda quickly successful in overcoming every sign of congestion.

Medical Times, April 5, 1845, *p.* 9.

55.—*How to Preserve Pills of Extract of Aloes.* Extract of aloes readily absorbs moisture from the atmosphere, which renders it difficult to preserve in the form of pills. This inconvenience may be perfectly avoided, according to M. Rottscher, by adding a fourth part of carbonate of magnesia.

Lond. and Edin. Monthly Journal of Med. Science, Jan., 1845, *p.* 76.

56.—*Valerianate of Quinine.* M. Francis Devay, Physician to the Hotel Dieu, at Lyons, has lately published a memoir on the valerianate of quinine: its mode of preparation; its chemical and pharmaceutical characters; and its employment in intermittent fevers and neuralgia. The valerianate of quinine, in small doses, is a very efficacious antiperiodic, superior to the sulphate from its neurosthenic properties; neither does it give rise to the gastro-intestinal symptoms occasionally caused by the latter salt. The quinine is modified by its intimate association with a vegetable acid.

The valerianate of quinine is formed by one equivalent of valerianic acid, one of quinine, and two of water, one of which constitutes the water of crystallisation. It has a slight odour of valerianic acid, and a bitter taste, which resembles bark. It is easily dissolved in water at the ordinary temperature; alcohol dissolves it much better, and olive oil has the same effect, on the application of a slight heat. The mineral and most of the organic acids decompose it. Submitted to a temperature of about 90° R. it loses one equivalent of water, softens, and melts into a resinous substance.

It is prepared in the following manner:—Into an alcoholic and concentrated solution of quinine, is poured a slight excess of valerianic acid; the whole is then suspended in twice its bulk of distilled water; the mixture is accurately stirred, and submitted to evaporation in a stove, at a temperature not exceeding 50°. When the evaporation of the alcohol has taken place, the valerianate is presented in the form of beautiful crystals, sometimes isolated, at others grouped together, which increase from day to day. It may also be prepared by double decomposition, by mixing the sulphate of quinine with the muriate of lime or barytes, dissolving both in weak alcohol.

The valerianate of quinine may be recognized by the following means:—1st. A concentrated alcoholic solution of the valerianate of quinine precipitates the neutral aqueous solution of the nitrate of silver; this precipitate is redissolved in a large quantity of water.

2nd. An aqueous solution of the valerianate of quinine does not precipitate that of the chloride of barium.

3rd. This aqueous solution, when boiled, gives rise to the separation of oleaginous drops of the melted valerianate.

4th. If this solution is treated with acids, there is a separation of valerianic acid, easily appreciable by its odour; and if this decomposition is effected with some crystallised valerianate of quinine and concentrated acid in solution, valerianic acid is obtained in an oleaginous form.

The valerianate of quinine, like that of zinc, being very easily decomposed, it is best to exhibit it in the most simple form, upon which its success in a great measure depends. We commonly administer it in a gummy solution, five decigrammes (ten grains) of the salt dissolved in 100 grammes* of the fluid. One of its great advantages is, that it can be easily dissolved in oil, and thus serve for frictions and embrocations over the spleen. For this purpose we have used the following liniment:—60 grammes of olive oil; 1 gramme of valerianate of quinine.

In neuralgia we commonly employ pills of six centigrammes each, made up in the most simple manner.—*Gazette Medicale de Paris.*

Provincial Medical and Surgical Journal, Dec. 24, 1844, p. 621.

57.—*Therapeutical Action of Iodide of Potassium.* Dr. Lisfranc now obtains great success from the administration of this substance, in white swellings, necrosis, ulcers of the legs, engorgement of the breasts and testicles, chronic syphilis, and some diseases of the skin. When a patient is about to be submitted to this mode of treatment, certain precautions are necessary, since some persons may take ʒj., without experiencing any inconvenience, whereas others cannot take gr. iv., and even grs. ij., without offering untoward accidents. Formerly, Dr. L. added from ℈ss. to ℈j. of iodine to the iodide, but, having remarked that it gave rise to intestinal irritations, he omitted it, and now employs the following formula:—R. Aq. distill. tiliæ Europ. ℥v., syrup. aurant. ℥j., iodid. potas. ℈j. M. Ft. mist. cuj. cochl. mag. mane nocteque sumend. ex aqua, decoct. sapon. offic. vel infus. humul. lup. This quantity is usually taken in the space of a week, and, on renewing the draught, the dose of iodide is raised to ℈iss., and an equal quantity is added to each succeeding one, until the patient takes ʒiiss., ʒiij., ℥ss., and even ʒv., which last, Dr. L. very seldom surpasses. The advantages resulting from the administration of this substance are: amelioration of the general health, especially in lymphatic patients affected with necrosis, and abundant suppuration, or marasmus, caused by an old white swelling. The inconveniences are: an astringent, metallic taste in the mouth, with some patients, very disagreeable, every morning on waking; this may be remedied by the use of the tooth-brush, or gargles, with water alone, or water to which, for every half tumbler, a tablespoonful of the spirit. cochlear. is added; a cutaneous eruption, similar to urticaria, and when the remedy is continued, resembling eczema, or prurigo; when the face is the seat, the subcutaneous cellular tissue is swoln, and forms small tumours, like tubercles. These accidents ought not to prevent the administration of the remedy, when the disease is very serious; but when it is slight, the medication must be ceased for a time, and then recommenced. As to the iodic salivation, observed by Mr. Wallace, Dr. Lisfranc, in upwards of one hundred patients, never witnessed it once. The diseases in which Dr. L. has advantageously had recourse to it, are: *tertiary syphilis*, and that in spite of irregularities in regimen and excess of drink; this was especially manifested in one of the lesions produced by the affection, which is seated in the rectum, and resembles cancer; so much so, that he always commences by administering the iodide, and it is only when that substance, aided by compression, &c., has failed, that he decides upon operating. In *necrosis of the bones of the extremities*, and for which amputation seemed to be the only means of obtaining a cure; the parts, thus affected, were the femur, the tibia, the phalanges, after whitlow. *White swellings: Ulcers of the legs:* for instance, in those of an atonic nature, or in wounds which, on individuals of a lymphatic temperament, from want of attention and cleanliness, or from friction, have become covered with vegetations, bleeding with the greatest facility, and, in every respect, analogous to a cancerous ulcer. The cicatrix, thus obtained, is, from its very formation, white, firm, resistent, and allows the patient to move about at a very early period. *Cancer of the uterus, and of the breast:* In the pain caused by these affections, opium is administered in some cases; at first, it soothes, but very soon becomes inefficacious; nor does it ever prevent the disease progressing; their cure may then be attained with the iodide of potassium. *In engorgements of various organs, chronic orchitis, tumours of the breast, &c.*

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* A *gramme* is equal to 15.434 grains troy.

It sometimes happens that, when this substance has been given a few days, the accidents above described appear; in such cases we must cease to administer it for eight or ten days, and then recommence it, to be ceased again, should the accidents re-appear; and it is very rare that, after having prescribed it thus, it is not tolerated on the third or fourth trial. Again, in diseases which require it to be taken for a very long time, certain peculiarities may be observed; for instance, when the iodide is administered to a patient affected with white swelling, at first a notable amelioration manifests itself, but very soon after the disease becomes stationary, and anorexia and insomnia declare themselves. Such a state is what Dr. L. calls iodic saturation; here, the continuation of the remedy is not only useless, but even hurtful; it must, therefore, be discontinued for a time, the patient be ordered to amuse himself, to take a nourishing diet, some tonics, &c., and to go into the country, if possible. Finally, when the system has thrown off the iodide, it may be prescribed anew, and with the same success as at first.—(*Annales de Therapeutique.*)

Medical Times, Jan. 11, 1845, *p.* 323.

58.—*On the Propriety of Inoculation in certain Cases.* By Geo. Gregory, M.D., Physician to the Small-Pox and Vaccination Hospital. [Dr. Gregory remarks that the desire for vaccination on the part of the public has much increased during the last year.]

Founding his views on the now indisputable fact, that small-pox spreads as widely *without* as with accompanying inoculation, and on the now equally established fact, that small-pox after vaccination proves fatal at the rate of 7 per cent., while inoculated small-pox is fatal only at the rate of one-fifth, or 1 in 500, Dr. G. proceeds to argue that it is unwise to prevent variolous inoculation *in toto.* Persons verging on puberty might, he said, with great prospect of advantage, be inoculated *after vaccination in early life.* If, as happened in the case of his own son, the inoculation failed to produce constitutional symptoms, the permanent security of the party was fully established; on the other hand, if febrile symptoms followed, the disease would probably be mild, and, at all events, would be undergone under the watchful eye and care of parents. As it is, the disease is often received at a period of life the most distressing, as by a young woman on the eve of marriage, by mothers in confinement, or by young men just embarking for India.

Dr. G. instances a variety of other important objects which might be gained by a repeal of that part of the "Vaccination Act" of 1840, which prohibits qualified medical practitioners from inoculating in England and Ireland, and he recommends to the legislature such a measure, and to the medical profession (when such permission may be granted) the establishment of a system of infantile vaccination, strengthened and made *doubly sure* by adult inoculation. The practice of *inoculation* might usefully be restricted to the period of life extending from the age of 10 to 20.

Medical Gazette, Feb. 7, 1845, *p.* 617.

The following replies were made by Mr. Marson, at a late meeting of the Westminster Medical Society, to questions put to him by various members:—The Small-Pox Hospital was nearly full at the present time, seventy patients a-month having of late been received. With two exceptions—viz., 1781 and 1838—the hospital has never, since its foundation, contained a greater number of patients. The character of the disease presented nothing unusual, and was fatal from the same causes as formerly. As a proof of the increase in vaccination, as many protected patients, as unprotected, had of late been received into the hospital—a circumstance quite new in the history of the institution. Of the patients admitted after vaccination, five out of six were between the ages of eighteen and twenty-three. In those in whom the cicatrix of cow-pock was perfect and well-marked, the small-pox was three times less fatal than when the cicatrix was imperfect. The new vaccine lymph left a better cicatrix than the old matter. He had re-vaccinated about three thousand persons; the vesicle seldom went through its proper stages; the areola was irregular, and the progress of the vesicle subsided about the fifth day. Females about nineteen seemed to be most susceptible of the influence of re-vaccination.

Lancet, Dec. 21, 1844, *p.* 358.

Of 139 persons attacked with small-pox in the course of eight years, in a district of Prussia, 47 had not been vaccinated and 92 had been vaccinated; of the unvaccinated 15 died, of the vaccinated one was lost. In addition to these, it was known that 121 persons who had been vaccinated were in immediate attendance upon the patients labouring under small-pox, without becoming affected.

The susceptibility to infection from small-pox appears to increase in a very regular progression, according to the number of years which have elapsed since the vaccination: at the end of the eleventh year the susceptibility to small-pox contagion is again very considerable; and it appears to reach its maximum after the sixteenth year. Almost the same progression as occurs in reference to the number of years since vaccination was performed, also occurs with reference to the more perfectly developed or severer forms of small-pox in the vaccinated: up to the fifteenth year not more than one-fourth of the vaccinated are severely affected; between the sixteenth and thirtieth years somewhat more than one-third, and after thirty years half of those attacked have small-pox in a severe form.

The following general conclusions on the subject may be drawn:

1st. Re-vaccination as a general rule is well undertaken between sixteen and twenty years of age, inasmuch as during this period the susceptibility or resusceptibility to small-pox is greatest.

2d. From the ninth to the tenth year after the first vaccination, the susceptibility to be affected anew with the vaccine poison exists in a considerable degree: re-vaccination among children of ten years of age having a like amount of efficacy, being successful as frequently as among other individuals.—*Dr. Schäffer*, *Medicinische Zeitung*, No. 13, 1844.

Medical Gazette, Jan. 5, 1845, *p.* 460.

59.—*Use of Arsenic in Ascites.* By Dr. Cormack. This gentleman believes that when ascites depends upon hepatic or splenic congestion, much benefit will be obtained from the administration of small doses of arsenic. He recommends that the dose should not at first exceed the 16th or 20th part of a grain; that this should be taken in not less than four ounces of water, and with an empty stomach. The dose should be repeated four or six times—not seldomer—in twenty-four hours. In skin diseases, intermittent fevers, enlarged spleen from intermittent fever, and, indeed, in every case in which arsenic is known to have specific effects, Dr. C. recommends that it should be given in the method above mentioned; and advises that all other drugs should, if at all possible, be suspended during its administration. In old cases of enlarged spleen and liver, the cure will be hastened by the use of a succession of blisters.

Lond. and Edin. Monthly Journal of Med. Science, Feb., 1845, *p* 157.

60.—A TABLE shewing the *average* Medical Attendance for the Years 1842, 1843, and 1844, on 1000 Families belonging to Benefit Societies—*in cases of slight Indisposition the Members attending at the Physician's Residence, and of serious Illness, having his Attendance at their own Homes.*

	Visited at their own Homes.	Prescribed for at Physician's Residence.	Total prescribed for at their own Homes and at Physician's Residence.
January,	228	489	717
February,	173	473	646
March,	170	496	666
April,	129	484	613
May,	148	523	671
June,	139	510	649
July,	99	444	543
August,	107	501	608
September,	144	469	613
October,	158	462	620
November,	162	521	683
December,	153	574	727
	1810	5946	7756

A TABLE shewing the average Sickness, in Months, experienced by 7,180 Members of Provident Societies, whose average Age is *under* 35 Years; and also shewing the Number of those who are *constantly* sick in each Month, reduced to an average of 1,000 Members.

	Sickness in Days.	Number of Members Constantly Sick.
January,	780	25·22
February,	693	24·75
March,	681	22·00
April,	546	18·00
May,	585	18·87
June,	507	16·90
July,	543	17·51
August,	468	15·00
September,	508	16·93
October,	576	18·58
November,	559	18·63
December,	602	19·42

We thus find that the average *annual* amount of sickness experienced by *each member* is 7·048 days.

The mortality experienced amongst the members of those societies has been 1·44 per cent, and for the wives of those members the mortality has been 1·12 per cent.; or, in other words, that one member dies annually in every 66, and that for every 100 deaths of males there are only 77·88 of females.

This is in accordance with the acknowledged and well-ascertained truth, that women are longer lived than men, and that a much greater proportion of married men die than of women. It is stated by Short, that '15 married men die for 10 married women;' and again, he says, 'it is near nine to three that the husband dies before the wife, and this is the reason that a greater number of women than men make second or third adventures.'

The following Table shews the portion of each year in which the sickness and mortality of members of these societies, and of medical attendance on the members and their families, are greatest, the months in which each of these events is most frequent being placed first in order in the proper column, and these months being formed into periods of three months each, shewing the quantity of sickness and mortality experienced by those 1,000 members, and also the attendance on the members, and the families of members, for each quarterly period:—

Sickness in Days.		Mortality.		Medical Attendance.	
January,	2,154	January,	5·292	December,	2·127
February,		March,		January,	
March,		February,		November,	
December,	1,763	October,	4·317	May,	1,986
May,		May,		March,	
October,		November,		June,	
November,	1,648	December,	2·785	February,	1,879
April,		August,		October,	
July,		April,		September,	
September,	1,483	June,	2·089	April,	1,764
June,		July,		August,	
August,		September,		July,	

We thus find that of 1,000 members, there are 19·32 constantly sick during the entire year, being in the proportion of 23·93 the first or most sickly quarter, 18·95 the second quarter, 18·11 the third quarter, and that in the three months that furnish the least sickness, there are 16·29 constantly sick.

The medical attendance on those 1,000 members is most severe in the months of November, December, and January; in which three months the average daily attendance amounts to 23·12, while even in the quarter requiring least attendance it amounts to 19·17.

The average *daily attendance* for the entire year for these members, and the families of these members, is 21·25; and although, as before-mentioned, the remuneration for this almost constant attendance is little more than nominal, yet it may be remarked, that until the establishment of these provident societies, and the habits of order and economy which are invariably attendant on their formation, the parties by whom they are composed scarcely ever, at any period of their lives, paid in any way for medical attendance, but in slight illness became dependent on casual relief upon the medical men of the district; and in cases of severe illness very usually became inmates of some of the many hospitals.

Dublin Journal of Medical Science, May 15, 1845, *p.* 254.

[The following Table, compiled from various sources, will also be interesting to medical men who attend benefit societies; and it may also be of use to the societies themselves, in inducing them to correct the false data upon which they calculate their future prosperity.]

	LABOURERS AND OPERATIVES.				No. 7. Average Annual Sickness of Members of Benefit Societies in Scotland.	No. 8. Average Annual Sickness of provident portion of Working Classes throughout Great Britain, according to the experience of Mr. Finlaison.
	No. 4. Employed in East India Company's Warehouses	No. 5. Average duration of Sickness per annum of every person employed in Cotton Factories of Lancashire.	No. 6. Males of Families in Wynds of Edinburgh.			
AGE.	Days & Decimals.	Days & Decimals.	Days & Decimals.	Years of Age.	Days & Decimals.	Days & Decimals.
16 to 21	4.02	4.42	2.8	18	2.5	5.18
21 ,, 26	5.40	4.91	5.1	23	3.8	6.75
26 ,, 31	4.49	6.88	11.0	28	4.6	6.78
31 ,, 36	4.55	3.85	8.3	33	5.6	6.33
36 ,, 41	5.57	4.13	4.1	38	6.2	7.86
41 ,, 46	5.18	5.09	15.1	43	8.8	9.02
46 ,, 51	5.43	7.18	30.0	48	9.1	11.76
51 ,, 56	6.80	3.47	16.2	53	14.8	16.77
56 ,, 61	7.21	12.68	30 4	58	17.8	23.57
61 ,, 66	10.24		42.7	63	20.0	33.22
66 ,, 71	9.93		64.2	68	36.0	61.22
71 ,, 76	10.60		41.0	73	38.6	101.24
76 ,, 81	12.67		83.6	78	70.9	164.72

Lancet, March 22, 1845, *p*. 328.

[It seems quite evident that no benefit society can continue to flourish for a great length of time, and will certainly fail when the members are advancing in years, unless the sums paid and received are in accordance with these calculations.]

61.—*On Oxyde of Silver, in Certain Diseases of Debility.* Sir James Eyre says, he has found half a grain of the oxyde of silver, three times day, uniformly succeed in curing pyrosis; he administers at the same time two of Dr. Hamilton's pills (composed of Ext. Colocynth. c. ℈ii. Ext. Hyosciam. ℈i. in pil. xii.) every night. He gives numerous cases illustrative of his success. He next advances instances of similar successful results in hæmatemesis and hæmoptysis, but he does not exclusively confine himself to the oxyde of silver alone, but assists its administration by bleeding, blistering, and other means.

[From having found this remedy much superior to all other means employed during an active professional life of upwards of thirty years, Sir James feels fully justified in inviting a trial of the medicine. That it is a tonic and sedative there can be no doubt, and there is also good evidence to prove that it is a safe and efficient astringent. In the cases enumerated, the dose never exceeded *three* grains a day, instead of six, as recommended when first introduced; and its employment where febrile action exists is not recommended.]

In addition to its value in gastrodynia, in pyrosis, in hæmoptysis, in hæmatemesis, and in the first and second classes of menorrhagia of Dr. Fleetwood Churchill, it will be found to be productive of infinite benefit in restraining, when absolutely necessary, hæmorrhage proceeding from the intestinal canal, obstinate chronic, diarrhœa, colliquative perspirations, leucorrhœa, and other maladies.

Dublin Journal of Medical Science, May, 1845, *p*. 250.

[Dr. Allnatt has, since the publication of Sir J. Eyre's valuable little book, tried the oxyde of silver in two cases, and says that he has found it to possess all the beneficial effects of the nitrate, without producing the "cerulean hue" which forms so strong an objection to the use of the latter. In one case the existing malady had been preceded by a severe epileptic paroxysm, which had for three years left behind it traces of its debilitating action on the brain and nervous system: the oxide proved of eminent utility. The other was an extreme case of leucorrhœa, as follows:]

E. L., aged 26, had suffered from irregular fluor albus for nearly seven years. The discharge at times was so acrid as to produce excoriations, and small miliary vesicles, about the internal labia. About twelve months ago she bore a child at the full period; and after a protracted labour, from which she slowly recovered, the discharge became greatly augmented, and subsequently acquired the character of half-coagulated albumen, mingled with clots of blood, and streaks of green purulent matter. From the constant pain in the back and loins, the obscure dull aching in the hypogastric region, the progressive loss of strength, dejection of spirits, wanness of countenance, chillings, and languor, which accompanied the discharge, it was suspected by the practitioners whom she had consulted that organic disease of the uterus had supervened; and as their measures had been ineffectual in affording relief, she had followed the unprofessional advice of a friend, and had resorted to the tincture of cantharides, and other irritating medicines. The disorder, with its attendant train of evils, increased, and about a fortnight since she was placed by my direction on the plan recommended by Sir James Eyre, and sent into a healthy part of the country. The following is an extract from a communication received to-day: "I am happy to say that the medicines you prescribed have had the desired effect; I have already derived great benefit from them; and I may state with certainty that the discharge has diminished to one-half its former quantity."

Considering the chronic inveteracy of this case, and the fact of its having previously withstood all the means devised for its alleviation, I regard it as an additional corroboration of the efficacy of the agent employed, which promises, I think, to become a remedy of essential value in many disorders, which, from their ungovernable nature, have hitherto baffled the skill of the practitioner.

Medical Gazette, May 2, 1845, *p.* 25.

62.—*Illustrations of the Importance of Ventilation.* By Mr. Squire. The usual argand gas-burner consumes about five cubic feet of gas per hour, producing rather more than five cubic feet of carbonic acid, and nearly half a pint of water.

Shops using thirty of these lights, therefore, in an evening of four hours, produce upwards of nine gallons of water, holding in solution the noxious products of the gas.

An argand lamp, burning in a room twelve feet high and twelve feet square, containing 1728 cubic inches of air, with closed doors and windows, produces sufficient carbonic acid, in rather more than three hours, to exceed one per cent., which is considered unfit for respiration, and when it amounts to ten per cent. it is fatal to life.

A man makes, on an average, twenty respirations per minute, and at each respiration inhales sixteen cubic inches of air; of these 320 cubic inches inhaled, thirty-two cubic inches of oxygen are consumed, and twenty-five cubic inches of carbonic acid produced.

Lancet, Jan. 11, 1845, *p.* 37.

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SURGERY.

63.—ON ARTIFICIAL ANUS.

By Sir P. Crampton, Bart., Dublin.

[In the excellent memoir on this subject which appeared lately in the British and Foreign Medical Review, (see Retrospect, vol. X., Art. 58), the reviewer regrets that for want of a sufficient number of facts, a very material point has been left undecided—namely, as to whether the power of retaining the fæces continues after the perineal operation of M. Amussat.

Sir P. Crampton, at a meeting of the Dublin Surgical Society, said it would give him great pleasure to supply this hiatus, by detailing the results of an operation for artificial anus performed by M. Amussat about nine years since.]

The nature of this congenital deformity was as follows:—"The vagina and anus were both naturally formed externally, but the recto-vaginal septum was deficient above, and only existed inferiorly to the extent of about one-third of an inch, so that the finger could be passed from either canal into the other. The upper portion of the rectum had no communication with the *cloaca* common to the vagina and the anal portion of the rectum, but its closed extremity could be felt at a height of about two inches towards the left sacro-sciatic angle. The anus thus communicated directly with the vagina above the imperfect septum already mentioned, but had no connection with the rectum, which terminated two inches above it, and was, in fact, properly speaking, *deficient* to that extent. Under these circumstances, M. Amussat determined to make an incision anterior to the coccyx, but posterior to, and not involving the, vaginal anus, to detach the posterior wall of the vagina from the coccyx and sacrum with the finger or the knife, to reach the cul de sac of the rectum, seize it with a hook, detach its entire circumference rather with the finger than by the knife, draw it down to the external wound, open it freely, give exit to the meconium, and secure, by points of interrupted suture, the edges of the opening in the intestine to the lips of the cutaneous wound." For two months the child went on well, the opening being maintained by the introduction of an ivory stopper, not much thicker than a full-sized quill or moderately-sized pencil-case. The introduction of the stopper, however, became more and more difficult every day, and at length the child's mother found it impossible to introduce it. The child was then brought to him (Sir Philip Crampton) in the following state:—She passed, with considerable pain, a small quantity of semi-fluid fæces, and appeared in great agony, under which she must have very soon sunk. He enlarged the opening to such an extent as to receive a bougie of sufficient size, the introduction of which it is still necessary to repeat for a few hours almost every day. This case then, he would say, supplies the desideratum mentioned by Dr. Williams, for it appears that the rectum has full power of retaining the fæces. M. Amussat had been severely criticized for not having operated so as to restore the original anus, by dividing the partition which separated it from the rectum above, and so restoring the continuity of the canal: but in that case it would have been impossible to have saved the child from the misery of a recto-vaginal opening that would have admitted of a free passage of fæces from the rectum to the vagina. Whatever may be the ordinary condition, then, of the parts in artificial anus, as relates to the existence or non-existence of a sphincter and levator ani, no such structure could have exercised any influence in the case in question, as the artificial anus was formed between the coccyx and the rectum. M. Blandin's apprehension therefore that incontinence of fæces must be the result of the perineal operation, in consequence of the non-existence of a sphincter, is without foundation.

[Dr. O'Beirne thinks that this case produces abundant evidence of what he has endeavoured to establish—viz. that the existence of a sphincter is not absolutely necessary to the retention of the fæces. This necessity, he believes, is to be attributed to the contracted state of the upper part of the rectum.

Dr. Ireland has taken the trouble to obtain answers to queries on the subject from a lady who had suffered from this accident. One of the facts elicited was, that after the bowels were freed, she had merely to perform the necessary ablutions, and from that time till the next stool, the vagina and rectum remained perfectly free from fæces.

Dr. O'Beirne considers that it is our duty, if possible, to avoid making an opening into any part of the colon, and that in cases of stricture it might be avoided. The failure in the use of instruments in cases of spasmodic stricture, he attributes to want of sufficient boldness in their use, and mentions a few facts to embolden practitioners, and to show the impunity with which the most obstinate constriction of the bowel in question might be overcome.]

These facts were as follow:—Of all the diseases in which constipation is most obstinate, tetanus is certainly the one. In some cases of this disease which had terminated fatally, he succeeded in passing the instrument to a considerable height, but only by means of long-continued, gradually increasing, and determined pressure against the point of resistance; when first he used this force, he remembered the instrument passed rapidly upwards, as if through a narrow ring, giving to his hand a sensation as if he had perforated the walls of the intestine, accordingly he withdrew the tube, and was much pleased to see its extremity coated with fæces, and bearing no marks of blood. This circumstance had occurred to him not once but twenty times in the treatment of those fatal cases to which he alluded. In those cases it was found after death that the whole of the colon was so enormously distended as to conceal the other intestines, and to equal in size the thighs of a very large man, while the uppermost part of the rectum was contracted to the diameter of the barrel of a quill, but felt much firmer. On cutting into the intestine at this point, neither the serous nor the mucous coat were found in the least thickened, neither did the muscular coat exhibit any signs of thickening other than that caused by the powerful contraction of its fibres upon themselves. It was quite evident in these cases that even this firm stricture was forced at each introduction of the instrument, so as to enable the bowels to be freed. Why, then, should we be deterred from employing a sufficient degree of force in other cases when the degree of resistance is infinitely less? When the difficulty of introducing the tube is great, the application of a blister over the sacrum, extending up a little on the spinous processes of the lumbar vertebræ, would be found a considerable assistance; and in order to effect this rapidly, if the case be very urgent, a sponge should be impacted into a tumbler, boiling water poured upon this, throwing it off repeatedly in order to produce the necessary degree of heat, and then the tumbler could be inverted over the part to be blistered. Having thus disposed of spasmodic stricture, he would now say that in cases of the organic kind, every success might be obtained by the same means, with this difference—namely, the use of small tubes gradually increased in size. With respect to malignant stricture of the rectum, he was of opinion that this might be a legitimate case for the lumbar operation.

[Dr. Williams says that the great difficulty in the formation of an artificial anus in the lumbar colon consists in the difficulty of distinguishing the colon from the small intestine, for the signs mentioned by M. Amussat, whether taken separately or collectively, are not diagnostic, consequently there is always a risk of opening the peritoneum, and thus sacrificing the entire principle and chief advantage of the operation. M. Amussat has however discovered a sign which bids fair to do much towards removing the difficulty in question.]

This sign rested on the fact that the small intestines sustained a motion of alternate ascent and descent corresponding to expiration and inspiration, in which the lumbar colon did not participate; if, therefore, the exposed intestine presented this oscillation, it was small intestine—if it did not, it might be presumed to be the colon. As M. Amussat made no mention whatever of this distinctive sign in any of his publications on the subject, it was very satisfactory that it had now been made known and recorded.

Dublin Medical Press, March 5, 1845, *p.* 145.

[At another meeting of the Surgical Society of Ireland, Dr. O'Beirne states that in his work on Defæcation, the thought it was satisfactorily shown that the cœcum is perhaps of all parts of the intestinal canal, that most peculiarly subject to large accumulations, while at the same time there may be no fæcal matter in the sigmoid flexure of the colon.]

In the natural process of defæcation, as it is called, the difficulty of transferring the load from the cœcum to the sigmoid flexure was formerly a kind of riddle to physiologists: the fæcal matter having obviously to rise, not only against gravity, but being also resisted by a quantity of flatus, which acts as powerfully as air would if admitted into a thermometer to resist the rising of the mercury. In his work he has satisfactorily shown how the transfer takes place, and how the introduction of the tube, by permitting the flatus to escape, so materially assists that transfer.

[Dr. Woodroffe then mentions that he had been in Paris lately, and through the kindness of M. Amussat, had seen the patient on whom he had recently operated.]

She opened her dress, took off a belt she wore round her waist, and withdrew a *bouchon*, with a tape attached, similar to a portion of a rectum vaginæ. While he (Dr. Woodroffe) sat near her, he could not detect the slightest offensive smell, nor was there the least redness or excoriation of the skin in the neighbourhood of the opening, While the plug was withdrawn she allowed him to pass in his finger, which he did to a considerable extent before he reached the intestine. He would observe that she appeared to have a sort of sphincter power over the opening, being able to repress the discharge by an effort of the will; she had perfect use, too, of all the muscles of the trunk. Having arranged her dress she left the house, and he was surprised to see her trot along the street at the rate of four miles an hour.

Dublin Medical Press, Feb. 1845, *p.* 117.

64.—ON AMPUTATION AT THE KNEE.

By James Syme, Esq., Professor of Clinical Surgery in Edinburgh University.

[There are few operations in Surgery which have excited much more discussion, or afforded room for the exercise of more ingenuity, than amputation of the thigh. And although the various modifications which have been introduced have certainly had the effect of restraining the hemorrhage, diminishing the suffering, and promoting union of the wound, the average frequency of deaths is still not less than from 50 to 70 per cent., whilst protrusion of the bone is a frequent sequela. Mr. Syme says that—]

Having seen the circular incision give place to the flap operation, and having witnessed the results of these methods variously modified, in the hands of many surgeons possessing every degree of operative skill, I am at length led to the conclusion, that there is something radically wrong in the principle of the operation. This error I believe to be, dividing the thigh-bone through its shaft instead of the condyles or trochanters.

The most frequent occasion for amputation of the thigh is afforded by disease of the knee-joint. Next to this may be ranked compound fractures of the leg and thigh; and then, tumours growing from the bones of the leg and thigh. Now, in regard to diseases of the knee-joint, it is well ascertained, that the warrant for amputation lies in the bone, and not in the soft parts, which, however much altered through scrofulous degeneration or suppuration, readily admit of restoration to their natural condition, as is clearly shown by what happens after excision of the elbow, or amputation at the ankle-joint. In so far, therefore, as removal of the disease is concerned, it is plain that amputation through the condyles of the thigh-bone would in this case prove sufficient. As to compound fractures of the leg, it will be admitted that if the integuments and muscles admit of the limb being removed at the middle, or lower third of the thigh, they cannot present any obstacle to a few inches more of the bone being preserved, while similar injuries of the thigh obviously require amputation at the trochanters. The same observation will apply to tumours of the bones, those of the tibia and fibula not requiring any more of the thigh-bone to be removed than may be suggested by convenience, and those of the thigh-bone itself demanding the highest practicable point of section. From this analysis it appears that taking merely the morbid condition into account, all the cases admitting of amputation at or below the middle of the thigh-bone, would admit of the operation being performed through the condyles.

In proceeding to consider the relative advantages and disadvantages of amputating through the shaft and condyles of the thigh-bone, it may in the first place be remarked, that this, the largest member of the skeleton, contains the most extensive medullary cavity, and possesses the thickest mass of dense osseous tissue. Dense bone dies more readily than that of a spongy or cancellated structure; and the action of a saw, to say nothing of ruffling the periosteum, must always be apt to cause exfoliation, which by impeding union of the soft parts, delays union, and opposes its perfect completion, by increasing the scope afforded to contraction of the muscles. It would, however, be a narrow view to suppose that the direct effect of local injury is alone concerned in causing death of the bone after amputation; and there can be no doubt that inflammation of the medullary membrane may co-operate, if it does not sometimes act exclusively in its production. The most conclusive evidence in support of this opinion, is presented by those conical-shaped exfoliations, extending up the interior of the bone, sometimes to the length of several inches, which are occasionally extracted from stumps. One of these in my possession, taken from the humerus, is five inches long. And I believe the thigh-bone would be more fruitful of such exfoliations if amputation through it were not so fatal. But if the medullary membrane be liable to inflammation, suppuration of its texture, and inflammation of the veins cannot fail to be the frequent consequence, especially in hospitals, where, notwithstanding every precaution, certain descriptions of injuries will always be apt to excite phlebitis, and other forms of spreading inflammation. But when the bone is divided through the condyles, nothing more than the epiphysis being concerned, the medullary membrane is not at all disturbed, while the cancellated texture is not liable to exfoliate, either from its proneness to die from injury, or through inflammation of any other texture. It may, therefore, be expected, that the operation would prove less fatal, than when performed in the usual way; and that the stump would be less apt to prove imperfect, through protrusion of the bone. These expectations derive encouragement from the results of amputation at the ankle-joint, to which I was led by similar considerations. Of twelve cases in my own practice, and in nearly as many more in that of other practitioners, who have been induced to adopt it, this operation has not in a single instance been followed by either death of the patient, or exfoliation of the bone; and so far from selecting favourable cases for the purpose, I have repeatedly removed the foot, in circumstances where I should have declined amputating the leg as altogether desperate. But the two following cases more directly support the expediency of an operation which I venture to recommend, as a not less safe and advantageous substitute for amputation through the shaft of the thigh-bone, than amputation at the ankle is now found to be for removing the leg below the knee.

[The first case was a young man, 21 years of age, admitted January 29th, 1844. The left knee had occasionally been painful for five years, and for the last twelve months had increased rapidly in size. A large abscess, pointing on each side of the ligamentum patellæ was opened, but the local uneasiness continued to increase, and the general health declined. The operation was thus performed:—]

Having applied a tourniquet, so as to compress the femoral artery where it enters the popliteal space, I made an incision across the knee on a line with the upper edge of the patella,—then pushed the knife from one side to the other under the joint,—cut a flap from the calf of the leg,—and finally sawed through the condyles of the thigh-bone, so as to remove the whole articulating surface, which was ulcerated and carious.

On bringing the edges of the wound together, I found the flaps were scarcely sufficiently long, as they required a little stretching to meet, and when stitched appeared more tense than is usually consistent with adhesive union. It was, therefore, with considerable surprise, and no less pleasure, that we saw the healing process proceed without retraction of the covering from the bone The edges of the *skin* indeed separated from each other to the extent of nearly two inches, but the subjacent textures remained adherent, until the superficial sore gradually contracted and cicatrized. The recovery, though thus rendered slow, was ultimately completed, and the patient returned to his distant home on the 31st of May.

The result of this case tends to confirm the expectations that had been previously formed with regard to the advantage of amputating through the cancellated extremity instead of the shaft of the thigh-bone, since there could be no doubt that exfoliation of the surface to any extent, however small, would have been attended with separation of the flaps and projection of the bone.

[The second case was a young woman, 22 years of age, with disease also of the left knee, of nearly three years standing. Frequent application of the moxa and other means having failed of affording relief, and the general health rapidly declining, amputation was resolved on.]

Profiting by former experience, I on this occasion made the anterior semilunar incision on a line with the *lower* edge of the patellæ, and had the integuments retracted before cutting into the joint above this bone. In other respects the operation was conducted as the first one had been, and when the edges of the wound were approximated, they came easily together, presenting a proper degree of fulness, without any straining or tension. The union was nearly completed by the first intention without any local or constitutional disturbance; the flaps, instead of showing any tendency to retraction, rather becoming more full and soft; and the patient presenting the aspect of one who had sustained some trivial injury, rather than undergone a capital operation. On the 14th day she was sitting by the fire, and took the dressings off without any assistance.

This case should, I think, remove any doubt that may have existed as to the safety of amputating at the knee, and consequently as to the expediency of doing so with a view to avert the danger of operating through the shaft of the thigh bone. It is upon this ground that I wish to found the operation, and therefore I have said nothing of some other advantages which might be mentioned,—such as the greater length of stump which, especially in females, must be desirable for the sake of appearance, and may, perhaps, be made available for using a support admitting of flexion at the knee,—or the facility afforded to employ the tourniquet, which causes serious embarrassment in removing the limb at any higher point.

I may remark, that the posterior flap must be made very long, and indeed to the full extent of the fleshy part of the gastrocnemii muscles,—care being taken, however, to avoid preserving more than a moderate portion in regard to thickness.

Lond. and Edin. Monthly Journal of Medical Science, May 1845, *p* 537.

65.—ON AMPUTATION OF THE ELBOW AND SHOULDER JOINTS.

By Robert Liston, Esq., F.R.S., &c.

[In many of the diseases of the elbow and shoulder joints, amputation is not required. The diseased bones may easily be taken out, and a considerable degree of motion may be retained. Park and Moreau first adopted this valuable mode of operating, and it is now become pretty general.]

It is a troublesome thing to separate the articulation in a sound state and get the bones out; but when the joint is in a diseased condition, the parts may be easily separated from each other. You are not entitled to operate unless the joint is disorganized, and you are then able easily to thrust out the bones of the humerus and forearm, and cut them off. The principal point to be attended to is, to avoid including in your incision the ulnar nerve. You so make the flap that you guard against interfering with it, and at the same time expose the joint throughout. All sorts of flaps have been made, but the most simple plan is to make an incision along the nerve toward its radial side. In this way you turn the nerve over the condyle, and then make a cross-cut right into the joint. In this operation you cut at once, through muscles and everything else, fairly down to the diseased joint. Having exposed the joint thoroughly, you have no difficulty in opening it. There is no looking for the lateral ligaments; you cut them across; and in the living body there is, as I have said, no trouble whatever in getting out the end of the humerus, applying the saw, and cutting off its extremity. You then denude the other bones, always taking care to cut towards them, thus saving the muscles and their tendons, the vessels and nerves; you will forthwith saw off the ends of these bones. In operating on a young subject, you can cut these bones with pliers, and in very young subjects there is no occasion whatever for the saw under any circumstances. In this specimen—a case of acute mortification from the improper application of a bandage where the limb has been removed in the middle of the upper arm—the saw, I think, was dispensed with. After the removal of these bones you bring the wound together, having put the bones of the forearm at right-angles with the humerus, and in a state betwixt supination and pronation. After the wound is in a great measure healed, you may employ passive motion; and in young subjects the motion of the joint may, as I have said, be to some extent preserved.

The shoulder-joint is sometimes affected with a similar disease. The apparatus of the joint is destroyed, the upper part of the humerus is perhaps, in a great measure, denuded by an abscess, and sometimes there is a corresponding disease in the glenoid cavity. Your object must be to get the patient out of the hectic condition into which he has fallen, and this you cannot effect without removing the diseased bones.

Here you will make the incision at the back part of the joint, and carry it fairly down to the articulation, pretty nearly along the posterior border of the deltoid. Having thus cut down at once upon the diseased head of the bone, there is nothing to prevent you from displacing it and taking it out of the socket. The capsule is all destroyed, the head of the bone is probably a good deal diminished in size, and by cutting open the joint you at once dislocate it.

You carry the limb across the chest, and by pushing it up a little you get to the neck of the bone, and by applying your saw, you may take away all the diseased articulating surface. You have thus made a large cavity, and if on examining the surface of the scapula you find that also diseased, you can easily, by detaching the soft parts, and applying cross-cutting pliers, cut that off. By this means you get rid of the disease, the cause of discharge and hectic. It is of great consequence to take away all the diseased bone, and the probability is, that if you succeed in doing so, the discharge will cease, and the sinuses heal up permanently. And you may be told, or you may have read in books, that you ought to be guided, in making your incisions, by the site of the openings, that you ought to lay the various papillæ and sinuses into one wound. This, however, is a cruel and unnecessary course; the fact is, that upon removing the cause of the discharge, the openings will all heal up without your troubling yourselves about them. The same remark applies to operations in other parts of the body, to amputations of portions of the hand, foot, &c. The patient, after losing the head of his humerus, though he may not be able to use his arm above his head, will still have all the motions of his hand and forearm.

Lancet, Feb. 8th, 1845, *p.* 145.

[In Retrospect, vol. X, p. 134, Mr. Syme says—"Previous to 1829 the operation of cutting out the elbow joint had not been performed in Great Britain." Since this paper was published we have received a note from Mr. Smith, Senior Surgeon of the Leeds General Infirmary, from which we take the following extract, to show that the operation was performed in Leeds, by Mr. Stansfield, as early as 1817 or 1818. Mr. Smith says—]

In 1818 I was town surgeon here, and had charge of the workhouse; during that time a man about 24 years of age, named Jeremiah Butterworth, a chimney sweeper, died under my care, in the workhouse, of consumption. Knowing that excision of the elbow joint had been performed with success upon him at the infirmary a year or two before, by Mr. Josiah Stansfield, then the junior surgeon of the infirmary, I was anxious not only to examine the joint but to preserve it as a pathological specimen. I asked the board, and in consequence of my explanation of the importance of the case obtained its permission to remove the limb, which I took to my own house. After satisfying my own curiosity by dissection of the limb, I presented the bones of the new joint as a trophy to Mr. Stansfield;—this gentleman died in the following January. After his death Mr. J. P. Garlick had possession of them. I succeeded Mr. Stansfield at the infirmary in February, 1819; at that time excision of the elbow joint was a recognized operation there, and had been performed by both my seniors, Mr. Chorley and Mr. Hey; for a time it fell into disuse, but has been performed both by my present colleagues, Mr. Hey and Mr. Teale, as well as myself. The last operation I performed, the case was so unfavourable, that I was recommended when the operation was half done to finish by amputation, but I determined to risk the case, and had the satisfaction of succeeding,—the cure being complete, with a very good power of flexion, extension, pronation, and supination.

66.—ON AMPUTATION AT THE HIP JOINT.

By Dr. Handyside, Consulting Surgeon to the Royal Infirmary of Edinburgh.

[Mr. Struthers reports a case of successful amputation at the hip-joint, for osteo-medullary sarcoma of the os femoris, which occurred in the practice of Dr. Handyside.]

John Wright, aged 13, was admitted into the Royal Infirmary, under Dr. Handyside, on 13th June, 1843, with an extensive tumour of the left thigh bone. On examination, the thigh was found to be much enlarged, especially at its middle, whence it tapered gradually towards each extremity. The tumour was hard and inelastic, connected evidently with the os femoris, and it occupied about the three middle fifths of that bone, leaving its extremities of nearly the normal size. Its surface was smooth and regular, and over it the muscles and other soft parts could be moved freely. The integument over the disease presented a somewhat glistening appearance, but was not discoloured; and beneath it there appeared some faint blue lines, indicating distension of the superficial veins. The tumour was the seat of acute, darting pain, which became increased towards night, and also underwent, occasionally, severe exacerbations.

The lymphatic glands of the groin, and of the rest of the body, were carefully examined, and found not to be enlarged or otherwise affected. The motions of the hip-joint were perfect, and were performed without giving rise to pain. The limb below the knee was much emaciated. The countenance of the patient was sallow, and had an anxious appearance; and his tongue was of a bright red colour. His body generally was not much emaciated; and his health appeared on the whole to be good.

Previous history.—Six years since, he had an attack of scarlatina, on recovering from which, the left thigh remained weaker than the other, and appeared also to be smaller in size. For this, the part had been rubbed frequently with various ointments. He continued to go about, otherwise quite well, till about six months ago, when during the night, he was suddenly seized with violent pain in the thigh. Poultices were next applied to the affected part, and afterwards sinapisms, and a few leeches; but under this treatment, the thigh increased rapidly in size. Since then, the tumour has gradually increased; and of late he has experienced considerable uneasiness, from the frequent pain in it, and the deprivation of sleep thus occasioned.

As amputation was the only method by which the patient's life could be saved, or, at least, prolonged,—and as the bone appeared to be affected at the trochanteric region also, as indicated by its apparent enlargement there, and by that region being the seat of stinging pain,—it was resolved that the limb should be removed by amputation at the hip-joint.

Accordingly, on the 30th June, the patient having had a good night's rest, and his bowels having been freely opened, the operation was performed by Dr. Handyside, at noon, in the following manner: —The patient was secured on his back on the operation-table, with the nates resting on its edge. The right limb was held aside by one assistant, and the left extended by a second. The femoral artery was then compressed against the pubes, by the fingers of a third assistant, and the knife was introduced rather above midway between the anterior superior spine of the ilium and the trochanter major. It was then carried downwards, forwards, and inwards, passing close over, and grazing the capsular ligament and the neck of the thigh-bone; and the point of it was brought out at about two inches and a half from the anus. The anterior flap was then rapidly formed, being about from three and a half to four inches in length. This flap was then seized by the left hand of the third assistant, who thus more effectually prevented hemorrhage from the divided vessels, and who, at the same time, elevated and retracted the flap thus made. As the knife entered, the second assistant (he to whom was committed the charge of the limb) held it midway between abduction and adduction, then slight flexion was made by him, and subsequently, complete rotation inwards, as the knife advanced. On the completion of this anterior flap, the limb was immediately rotated outwards, by which movement the capsular ligament was fully exposed, and rendered quite tense, at its thinnest part, where it was struck by the knife, so as to penetrate the cartilage covering the head of the bone. At the same moment, the limb was abducted and depressed, which made the ball of the os femoris start forwards from the acetabulum. The teres ligament, thus rendered tense, was divided by the point of the knife. The operator, then, grasping with his left hand the head of the bone, and maintaining it on a transverse plane with the neck and trochanter major, passed the blade of the knife behind these parts, dividing thus the remaining portion of the capsular ligament; while, at the same time, he completed the separation of the limb, by rapidly forming the posterior flap, which was of greater length than the anterior one.

A small portion of the tumour, which was observed to remain on the divided surface of the posterior flap, was now carefully and completely removed. The hemorrhage from the sciatic and obturator arteries and their branches, as these issued from their pelvic apertures, was temporarily arrested by the instantaneous and firm application of two dry sponges, which, during the ablation of the limb, two other assistants watched the opportunity to apply; and the bleeding from the many small vessels of the posterior flap was farther prevented by the quick application of the expanded hands of the second assistant, instantly on his dropping the amputated limb. The vessels of the posterior flap were secured by ligatures, previously to those of the anterior, the superficial femoral being tied last. Fifteen vessels in all required ligature. About six ounces only of blood were lost, and this flowed chiefly from the divided surface of the ablated limb. The flaps were brought together by seven points of the interrupted suture; a pledget of dry lint was next applied,—and this was retained, while the stump also was supported by the application, around the loins and pelvis, of a broad cotton bandage.

The patient bore the operation well; but symptoms of the shock exhibited themselves before he left the table, notwithstanding that stimuli to the amount of four ounces of brandy and two of wine were administered. He was replaced in bed, after about 15 minutes only had elapsed since his leaving it, and the removal of the limb did not occupy more than about one-third of a minute, although a trivial delay was occasioned at the moment when the limb was forcibly depressed, by the attendants having, in their desire to steady the patient's body, drawn the nates backwards on the table, from which position he had to be again drawn forward.

Soon after being placed in bed he became much excited, from the load of stimuli that had been given him during the operation; but on vomiting freely, he became quite calm. The pulse, however, soon began to sink, so that additional stimuli were administered. On this he revived, and about an hour and a half after the operation the pulse had risen to 115, and half an hour thereafter reaction set in.—*An opiate, consisting of* 20 *drops of the sol. mur. morph. was then administered, and repeated twice within an hour.*

[The case proceeded favourably until the 5th of August, when the patient left the Infirmary. Subsequently, malignant disease manifested itself in the system, and about four months and a half after the operation, the patient died.]

It is commonly believed, that this operation is in itself much more severe and dangerous than that of amputation through the trochanters, or at the upper fifth of the thigh; but the difference between them is not so great as might at first sight appear. The flaps formed, the vessels divided, and surface exposed, are nearly the same in both; whereas in the former, the operation is much more easily and more rapidly executed, and the removal of a few inches more of the bone is attended with less shock and danger to the patient, than is the division of the bone by the saw, in its trochanteric region. Lastly, any greater fatality which may have followed the former, is due to the fact that the cases in which it has been performed have been much more complicated and dangerous, as well as more hopeless, than those in which the latter operation has been practised. The superiority, also, of the operation of disarticulation, in a case of disease of the bone, where there is suspicion of the upper end being affected,—as in the case which has given rise to these remarks,—is sufficiently evident.

In regard to the easiest, safest, and best method of performing an operation of such magnitude and importance as amputation at the hip-joint, surgeons are not yet entirely agreed. Very many different methods have been proposed and practised, but these may be referred to three principal methods, with their modifications; excluding that by the circular incision, which was recommended and even practised by Mr. Abernethy. It is also almost unnecessary to notice the old preliminary practice of securing by ligature the common femoral artery, as practised by Baron Larrey, this being now superseded by compression, effected by the fingers of an assistant. *First*, There is the method of making directly lateral flaps by transfixion and cutting from within outwards; the disarticulation being effected between the formation of the flaps, as practised by Larrey,—the internal flap being first formed. This method has been varied by different surgeons. Thus, Langenback reverses the order of forming the flaps, by beginning with the external; and Dupuytren begins with the formation of the internal flap, by cutting from without inwards. *Secondly*, The method by the formation of postero-external and antero-internal flaps, effected also by transfixion, and then cutting from within outwards, beginning with the external flap, but leaving the disarticulation till the end. This method is practised and recommended by Lisfranc, and has been followed by Mr. Syme. It has also been varied by cutting from without inwards. *Thirdly*, The formation of antero-posterior flaps, the disarticulation being effected after the formation of the anterior flap. The anterior flap is derived partly from the inner side of the thigh, and the posterior one partly from its outer side.

The last described method was practised by various surgeons, so far back as the year 1806, but in such a manner as not to have been generally adopted by subsequent operators, the anterior flap having been made of great length, and the posterior one cut very short. An improvement on this method, adopted by Mr. Liston, is that which was practised in the present instance.

As to which of these methods the preference should be accorded, the surgeon must be guided principally by the nature of the case. However, when circumstances will allow of it, the antero-posterior flap method,—just adverted to, and as described in the early part of this narrative,—will be found, I believe, to be the preferable one. The vessels divided are the same, and they are more easily secured than when the surfaces exposed are lateral,—the flaps are of more equal dimensions, and lie afterwards more accurately in apposition, —the articulation is more rapidly reached, and is exposed at a more favourable part for being opened,—the head of the bone is more easily dislocated, and the division of the ligaments more easily effected;—the removal, too, of the limb is completed with one instrument only,—and, finally, by this method the whole operation can be much more easily and rapidly completed, than by practising any of the other methods.

For these reasons, therefore, I would recommend the adoption of this mode of performing the operation of amputation at the hip-joint.

Lond. and Edin. Monthly Journal of Med. Science, April, 1845, *p.* 254.

67.—ON CLEFT PALATE AND STAPHYLORAPHY,

By Wm. Fergusson, Esq., Professor of Surgery, King's College, London.

[Mr. Fergusson has made some general remarks on the operation for cleft palate, performed in this country and abroad. He gives an account of a dissection which he made of the muscles of the roof of the mouth in a case of cleft palate; and after examining the opinions of different eminent pathologists concerning the motions of the velum palati and its arches, states his own views as to the actions of the various muscles when the palate is cleft. He describes, moreover, four different states in which the flaps on each side may be seen on looking into the mouth of a person with cleft palate, and irritating them in different ways. By pursuing this course of inquiry he arrives at the following conclusions:—]

1. That the flaps are slightly drawn upwards, and to the sides, when the levator palati contracts. 2. That when the levator palati, and palato-pharyngeus, act strongly and together, the flaps are so forcibly drawn from the mesial gap, that they can scarcely be distinguished from the sides of the pharynx. 3. That the flaps are forced together, and the edges come into contact, when the superior constrictor muscle contracts during the act of deglutition. 4. That the circumflexus palati possesses but a feeble power over the flaps. Lastly, the fibres of the palato glossus were very imperfectly developed in the specimen in his possession. The chief object of his paper is to communicate a novel plan of operating in staphyloraphy, founded on the above investigations, and which he has put in practice, with most satisfactory results, in two cases, during the last twelve months. The principle of his new proposal is to divide those muscles of the palate which have the effect of drawing the flaps from each other, and widening the gap between them when they contract; so that the stretched velum may be in a state of repose, and the pared edges may not be pulled asunder by any convulsive action of the parts, during the process of union. In other words, he advises, as an important accessory to the operation of staphyloraphy, the division of the levator palati and palato-pharyngeus muscles, and, if requisite, the palato-glossus.

Mr. Fergusson says, that in his operations he has been guided by a rule generally followed in these cases by surgeons; he has not operated until the patients were of an adult age. In both cases, little of the hard palate was involved in the fissure. Such a condition, he thinks, makes little difference regarding the proposed operation, for, as he has pointed out, the motor power influences only the soft tissues; should Warren's operation be resorted to, it is quite clear that the tissues dissected from the bones will be subjected to no motory influence. He pointed to some casts before the Society, which exhibited the fissure in the bony palate, and remarked, that an observation of these would shew that when the soft tissues were dissected, and brought downwards, they would easily meet in the mesial line.

[Mr. Stanley remarks, that the chief novelties in Mr. F.'s paper were his explanation of the mode in which persons affected in this manner were able to swallow food without its passing into the nostrils, and the division of the motor muscles of the palate.

Mr. Fergusson describes the two cases referred to in his paper, mentioning that he had referred to them chiefly with the view of producing living evidence respecting his operation.]

One of the patients was a youth, about seventeen years of age, who had a congenital defect of the palate. He was anxious to make his way in the world, and was desirous, as he had interest, to go into the army, but his deformity rendered his success almost hopeless. When he (Mr. F.) first saw the case, the gap was so extensive, that he was not sanguine as to the success of an operation in producing union, or improving the voice, for experience had convinced him that the latter was scarcely to be more than hoped for. The patient, however, was willing to abide the result of any operative procedure, and the operation described in the paper had accordingly been performed. A part of the gap had opened again, but a second operation was some months afterwards performed, and the success had been complete. The tones, and mode of articulation, appeared at first to be somewhat improved, but soon returned to their former imperfection, and so remained until he placed himself under a teacher of elocution, which he did eight months after the operation. Under the tuition of Mr. Hunt, in a very brief period, the improvement had been truly astonishing, and he (Mr. F.) had no doubt would eventually be such as would enable him to enter the army. The second case was that of a young lady, the same age as the former patient, and who seldom or never attempted to speak in company, so conscious was she of the miserable defect under which she laboured. She cheerfully assented to the operation, which in her case had been successful. There still, however, remained, in this case, a slight aperture anteriorly; this, however, would doubtless soon be closed. Surgeons acquainted with these operations knew well that they occasionally required repetition, and that apertures would sometimes remain for a considerable period afterwards, until closed by the use of the cautery, or of caustic. It might be said that this patient required to be taught to speak, and this, he thought, she would soon do, if placed under a good teacher of elocution. He had, when Muller and Warren were in this country, inquired of these distinguished surgeons their experience respecting the influence of the operation for cleft palate on the voice, and both these gentlemen replied that they had reason in some cases to be disappointed. A few days after the operation would determine its success, for if, after the stitches were removed at the expiration of six to ten days, the parts kept together, a perfect cure was pretty certain. He referred to a case lately related to him by Sir B. Brodie, in which, after the operation, no improvement in articulation took place until the patient had taken lessons in elocution. He afterwards spoke tolerably well, and obtained a commission in the army.

Medical Gazette, Dec. 20, 1844, *p.* 389.

68.—ON PRIMARY AND SECONDARY UNION OF WOUNDS AFTER AMPUTATION.

By Baron Larrey.

[This eminent surgeon whilst in London admired the calmness and dexterity manifested by the different surgeons in their operations, but did not approve of their mode of dressing the wounds. He says on this subject,—]

"Their great aim and object seem to be to cause the solution of continuity to disappear. The result of this over-anxiety is that not only they bring together and place in exact apposition the edges of recent wounds, but they even treat old wounds and ulcers in the same manner.

In general, it is a physiological error to believe that we abridge the labour of nature in the cicatrization of wounds, by bringing and retaining their surfaces into immediate contact with each other, when the wound is the result of amputation of a limb in its continuity. In this case it should be remembered that all the tissues or organs are divided perpendicularly to the axis of the bone. However exact may be the union or apposition effected at the time of the first dressing, there must always remain at the bottom of the wound a cavity in which will accumulate the fluids that continue for some time to ooze out from the open small vessels. In this manner, therefore, there can scarcely fail to be a more or less considerable effusion, the presence of which necessarily proves injurious, on the one hand by the distention and tumefaction of the two flaps thereby occasioned, and on the other, by the absorption of a perhaps putrid matter into the circulation, and a consequent infection of the whole system. The presence of pus in the veins of an amputated limb is no proof of the vessels being inflamed; they are only the conductors of the morbid matter generated in the wound. Even the divided nerves become penetrated by the miasmatic principle, or by the carbonic acid developed in the purulent *foyers* that are formed in consequence of a sort of fermentation.

When the tissues of an injured part are in a state of inflammation, they are not at all in an apt condition to unite; and the only way, in which they can become *degorged*, is by the process of suppuration being established.

When the operation is performed for any chronic disease of the extremity, as for caries of the bones, white-swelling of the joints, or cancerous or other malignant degeneration of the soft parts, I consider it to be quite indispensable, if we hope to prevent local engorgement and purulent infection, that the divided surfaces be not immediately united and kept together; so that the effused fluids may not be retained or forced back upon the system, but may ooze out from the wound as they are formed. Nearly the same remarks hold good in cases where a limb has been amputated for a recent injury. At least, such we have found to be the case in our own experience; and the surgeons of our army at the recent capture of the Citadel of Antwerp fully confirmed the truth of my remarks. In almost all the cases, the immediate union had been adopted at the first dressing of the stump; but, within twelve or twenty-four hours, the re-action which ensued was found to be so violent as to compel the surgeon to remove the bandages and plasters. On this being done, the unpleasant symptoms subsided; but in not a single instance was the healing complete before the 50th or 55th day after the operation. In the cases, on the other hand, that were treated on my principles, the wound had generally healed full three weeks sooner. In a very few instances, the exact and primary union took place, and the healing of the stump was very rapidly (*prematurement*) effected: but what usually happens then? The internal adhesion does not and cannot take place except by a sort of mere *recollement* or agglutination of the divided tissues, so that the vessels cannot be retained in such a mutual apposition as to anastomose with each other, and the divided extremities of the nerves cannot unite together, end to end, as constantly happens when the treatment of the wound has been conducted on my principles, and according to the obvious intention of nature, which will never be violently thwarted by the intelligent surgeon. Moreover, the stumps, that are prematurely cicatrised, generally remain more or less painful; they are apt to ulcerate on the slightest causes, and even sometimes to mortify. * * * In fine, Nature must work slowly and without disturbance to effect the process of healing the wounds after surgical operations, whether these have been performed for chronic diseases or for recent injuries. This department of surgical practice in England has always appeared to me to be far from the perfection which might be expected from such able men as the surgeons of that country."

Larrey is a great enemy to the frequent dressing of all recent wounds, whether these be simple or complicated with fracture of bones. In the case of gun-shot wounds, the frequent renewal of the dressings is, we need scarcely say, often quite impracticable; it is therefore a matter of serious importance to know the best mode of proceeding under such circumstances. The authority of so experienced a writer will very properly command no ordinary attention. The main object of his instructions seems to be, to place the wound in such a position that Nature is interfered with as little as possible in the reparation of the injury, that has been inflicted. With this view he seeks to maintain the part in perfect quietude, guarding it from exposure to the outward air, and maintaining a proper temperature around it; and effecting these ends, without confining the patient to bed, or even to the house. He found by experience that in cold seasons wounds were, on the whole, more tardy of healing—especially if they were frequently exposed to the air—than in warm ones. He had too often occasion to verify the truth of this remark in the dreadful campaigns of Russia, Saxony, and France; especially when contrasted with the memorable one of Egypt. It was during these wars that the admirable effects of his 'appareil inamovible' were most conspicuous. We were retreating, he says, all the while, and yet unwilling to leave our wounded behind. Accordingly, most of our patients, after they had their wounds dressed according to my plan, were immediately dispatched forwards, and some of them even reached their homes in France before the original dressings of their wounds were removed. We give but one instance. A soldier, after having his arm amputated at the shoulder-joint after the terrible battle of Moskowa, was advised to proceed direct on to his native place in Provence, and do nothing to the wound except keep it clean by sponging away any discharge from the outward dressings, and cover the limb with a good sheep's-skin, to guard it from the cold and damp air. When he reached home, and the dressings were removed, the wound was found to be nearly cicatrized. This is one of many scores of similar cases, where the primary dressings were not removed for two, three, or even four weeks after they had been put on.

The following are the instructions given by Larrey how to arrange and apply his "appareil." If the fracture of the limb be complicated with a wound, we should first simplify it, as much as possible, by freely incising (*debrider*) its edges, extracting all foreign substances or pieces of broken bone, and arresting the hæmorrhage. When all has been done, we should approximate the edges and keep them in apposition by means of a piece of linen (linge fenetré) on which some balsamic substance, such as the Styrax ointment, balsam of Mecca, &c., has been spread. Pledgets of lint, carded cotton or tow, are then to be placed over the dressing and the anfractuosities that correspond to the wound; also, some square compresses dipped in a glutinous strengthening fluid, that is prepared by beating up the white of two or three eggs with camphorated wine or vinegar, or, in lieu of these, with salt water. These compresses should be carefully applied over the whole of the injured part, while an assistant is engaged in maintaining the fractured bone or bones in exact apposition by appropriate extension and counter-extension. These compresses perform the service of immediate splints, without their inconvenience. They are kept in their place and are moreover strengthened by an eighteen-tailed bandage, which, when properly applied, maintains every thing firmly together. The foot and ankle-joint should previously be enveloped in long compresses, that have been wetted in the same fluid. A pad of tow, of a pyramidal shape, is to be placed under the *tendo Achillis*, to make all level and even, so that the pressure of the apparatus may be uniform throughout. The surgeon is then to take two cylindrical rolls of new rye straw, and, wrapping them up in the opposite edges of a towel or small sheet, which is to be stretched out under the leg, he applies them on each side, having previously interposed two or three flat cushions filled with oat-chaff, to prevent the pressure of the straw rolls on the skin. These are secured in their place by a good many broad tapes or ribbons, which should be tied over the outer roll of straw, and in such a manner that they do not press directly upon the crest of the tibia. The advantage of the straw rolls is that they are so elastic, that, although they give way at first to the swelling of the limb, they continue to remain in close contact with it as the swelling subsides, and no void ever exists between it and the apparatus—an objection to the paste-board splints, and other substitutes which have been suggested of late years. As a substitute for the foot-board, I use a piece of a folded sheet placed like a stirrup under the sole, some tow being previously interposed to fill up the concavity; the two ends are brought up, crossed over the instep, and then secured to the straw rolls with strong pins.

The loose end of the sheet, stretched under the leg, which extends below the inferior ends of the straw-rolls, is to be folded under the foot and over the ends of the rolls, and then firmly secured by a few stitches or pins.

With such a simple, and yet so efficient, an apparatus, the reader will readily understand how a patient is able to walk about with the aid of crutches, the foot being merely suspended by a ribbon passed over the neck. The same apparatus is equally well suited for fractures of the body, or of the neck, of the femur. We have only to lengthen the external straw-roll as far up as the pelvis, and secure it firmly by a belt passed round the body. The limb, in such cases, should be kept in the horizontal position, until the callus has become consolidated.

The camphorated albumino-vinous wash, which we have recommended, has the great advantage of increasing the tonic action of injured parts, and of preserving their natural heat, without obstructing the meshes of the linen or cotton cloth that is used in making the apparatus. The thinner portion of the discharge oozes out, and may be removed with a sponge, whenever it is necessary.

Medico-Chirurgical Review, Jan. 1845, *p.* 55—69

69.—ON FUNGUS OF THE TESTICLE.

By James Syme, Esq , Professor of Clinical Surgery, &c , Edinburgh.

[This disease was ably treated on by Mr. Lawrence in 1808. The testicle from a variety of causes, as a blow, or gonorrhœa, enlarges and inflames—the skin at last ulcerates, and a fungoid excrescence sprouts from the part. This growth has its origin from the glandular substance of the part, a protrusion of the tubuli seminiferi often taking place. Mr. Lawrence recommends the removal of this substance by escharotics, the ligature, or the knife. Still, as Mr. Syme says, this could not be considered as a very satisfactory operation, although a great improvement on the old one of castration, for it was plain that a portion of the gland must be sacrificed in order to preserve the remainder. In order to remedy this evil, Mr. Syme proposes an improvement in the treatment. He says:]

When the fungous growth is divided longitudinally, that is from the base towards the circumference, it may be seen to consist of two textures distinguished by their colour and arrangement. One is brown and disposed in straight lines, radiating from the base, where they are nearly, or quite close together, towards the circumference, where they are more or less apart, according to the size of the excrescence. The other is white and granular, lying in the spaces which are afforded by the diverging rays. The former is composed of the tubuli seminiferi, altered in situation but not in structure, while the latter is simply organisable lymph that has been effused into the interstices. The relative proportion of these textures may be seen best by making successive sections of the fungus, parallel with its base. Here the substance of the testicle appears little if at all altered, and presents a mass of uniform brownish colour. But in proceeding towards the circumference, each slice shows more and more of the white interstitial substance, until it seems to be the sole constituent. In addition to these facts, which are within reach of the naked eye, Mr. John Goodsir detected in a fungus which I gave him for examination, by the microscope, that it was covered externally by a thin layer of substance possessing the characters of a granulating surface. So that the excrescence might be regarded as merely an extreme degree of exuberant granulation, or what in vulgar language is called "proud flesh."

This observation suggested to me the idea, that by the use of proper means the fungus might be made to retrace its steps, through absorption of the white substance and gradual approximation of the brown, and that the granulating materials of the surface might thus be enabled to complete the healing process. Pressure was obviously the agent on which reliance should be chiefly placed for producing the effect desired with this view, and the most convenient mode of compressing the growth, seemed to be enclosing it within its proper covering of the scrotum. There is no loss of substance in this part, as the fungus issuing through a small ulcerated orifice, merely presses the integuments aside, so that they are found lying in loose folds above the dense ring that encircles the neck of the protruded mass. It must therefore be easy to obtain from this source, an abundant supply of materials for the purpose.

In my clinical lectures last winter, I explained these principles, and tested their soundness on a patient in the hospital, with the most satisfactory result.

Case 1.—Andrew Ayton, aged 26, from Penicuick, was admitted on the 8th of January last, on account of sores upon his legs, and a fungous excrescence from the testicle, about the size of a filbert. On the 15th I cut round the fungus, and extended the incision upwards as well as downwards, so as to give it an elliptical form. The integuments were then separated on each side, and brought over the growth, where they were retained by three stitches. The scrotum was supported by plasters and a bandage. It appeared at first as if union by the first intention had taken place completely; but part of the wound suppurated, without, however, showing the slightest disposition to protrude. The patient might have been allowed to go home soon after the operation, but was retained until the wound had fairly cicatrised, and left the hospital on the 9th of February.

As the fungus in this instance was of a small size, the following case, which exhibited the disease in its most formidable aspect, will probably be considered better evidence in favour of the treatment —though, I believe the truth to be, that the obstacle to recovery is greater when the excrescence is small, than when it has attained a larger extent—since the tendency to protrusion must be stronger in the former condition than in the latter.

Case 2.—William Smith, aged 38, from Berwick-on-Tweed, recommended by Dr. Cahill, was admitted on the 13th of October last, on account of a fungus of the testicle. It was of a large size,—and in fact comprised nearly the whole testicle, so that hardly anything more than the cord and epididymis remained within the scrotum. It was attributed to the effects of a blow.

On the 15th, I proceeded as in the former case, but of course found it necessary to make a much more extensive separation of the scrotal integuments, in order to obtain a covering for the fungus. Complete reduction having been effected, the edges of the wound were stitched together, and carefully supported by straps of adhesive plaster applied round the scrotum, which had been shaved to permit their employment. A T bandage was then put on to keep the parts more securely steady. No unpleasant symptom followed the operation, and at the end of a fortnight the cure might be nearly considered complete; and I believe would have been so, if the thick and indurated margin of integuments surrounding the neck of the fungus had been cut away. But in the course of another week there could be no hesitation in regarding the patient as entirely well; and the drawing then taken shows how perfectly the parts had regained their natural condition.

It was well said by an eminent surgical writer of the last century, that " a grain of matter of fact to a practical surgeon is worth a pound of reasoning," and, I accordingly hope, that the results of these cases will outweigh the various speculative objections which have been, or may be urged against the practice now proposed. The only one of these which I think it worth while to notice, as being the principal difficulty *à priori* with gentlemen for whose opinion I have much respect, is, that the surface of the fungus would not unite with the superinduced integuments. For my own part, I never entertained any apprehension of inconvenience from this source, and fully expected—what we now see actually happens —that the surface of the fungus being coated by a texture of granulating nature, would unite with the raw surface of the integuments so soon as it became encrusted with effused lymph. But even if this union had not taken place, the object in view would still have been attained, though not quite so speedily, by shrinking of the fungus through absorption of the substance effused into the interstices of its tubular texture, and contraction of the granulating cavity in which it lay until cicatrization was completed. It is now ascertained that the shorter process is followed; and in order to facilitate it as much as possible, I think it will be expedient always to remove the hard ring of skin through which the fungus protrudes, so that the whole integument concerned may be competent for adhesive action not only on the surface, but also between its edges.

Lond. and Edin. Monthly Journal of Med. Science, Jan., 1845, *p.* 3.

70.—ON STRANGULATED HERNIA, REDUCED "EN MASSE."

By James Luke, Esq., Surgeon to the London and St. Luke's Hospitals, &c.

[Mr. Luke, in a paper read before the Medico-Chirurgical Society, directs attention to the fact, that in cases of strangulated hernia the mass is sometimes reduced either by the patient or surgeon, and, nevertheless, the symptoms of strangulation still continue. This is owing to—]

The reduction of the hernial tumour through the aperture of the abdominal parietes, together with its investing sac, whereby the hernial contents continue still subject to strangulation, in the same degree and by the same cause that existed previously to the reduction, and demand, no less imperatively, liberation from constriction by an operation, than when presenting the more obvious guide of external tumour. French surgeons have called this kind of reduction "*réduction en masse*," or "*réduction en bloc.*" But British surgeons appear to have considered the occurrence to be of such rarity, as hardly to have any influence upon the general course of practice. We, therefore, find the surgical records of our own country almost wholly barren of cases of this description, and our best and most approved writers upon the subject of hernia are altogether silent, or refer to examples taken from the records of other countries, where the occurrence of "*réduction en masse*" has excited greater attention.

[After relating five cases of this description which came under his observation, Mr. Luke makes some excellent remarks on the diagnosis of such cases, and on the necessity even of laying open the parts and exploring for the strictured portion of intestine. In some cases there will be little to guide the surgeon in his diagnosis, except the history of the case and the present symptoms of strangulation—the patient probably had a hernial tumour which he reduced himself: and still the symptoms of strangulation increased in seveirty. Perhaps there may be nothing to be seen externally; and there may or may not be a tumour indistinctly felt at the internal ring which may be painful on pressure, and which is felt to be rather moveable, or it may rather resemble a circumscribed hardness of the parts, like a collection of fæces in the colon. In such a case, when all other means have failed, and when delay would be certainly fatal to the patient, the surgeon seems to be warranted in performing an operation of exploration, which we cannot describe better than in the following case of Mr. Luke:]

The patient being placed with his legs over the side of the bed, and his shoulders supported by pillows; an opening between three and four inches in extent was made by transfixing a fold of integuments over the course of the inguinal canal; by which opening the tendon of the external oblique muscle, the external abdominal ring and spermatic chord were brought into view. A finger was then introduced into the ring to feel for some indication of the presence of a tumour within the inguinal canal, but there was not any discovered. The canal was next laid open by a division of the tendon of the external oblique muscle. It was observed that the spermatic chord was clear and unobscured by any superjacent structure, except by a small lobule of fat which overlaid its upper part. While pursuing the examination towards the internal ring, some cellular membrane lying on the inner aspect of the chord appeared more condensed than usual in that situation; which, upon closer investigation, proved to be a condensed capsule containing an empty cavity within it, sufficiently large to contain a small egg. It was thought probable that this capsule had formed an investment to the hernial sac, and was now left empty by reason of the reduction that at this time was strongly suspected to have been effected. A finger passed along this cavity entered the internal ring, the large, firm, and defined borders of which were distinctly perceptible. By pressing the finger a little more deeply within the abdomen, the rounded and tense surface of a tumour was readily detected, which, after some little more exposure, was seen to be dark-coloured. It was clear that the hernial sac was now reached, and the fact of a reduction *en masse* was made manifest. It was ascertained by an examination of its surface that the seat of stricture was at a considerable depth from the internal ring, and probably upwards of two inches from the abdominal parietes.

The subsequent steps of the operation consisted of freely dividing the margin of the internal ring, by which proceeding the hernial tumour was permitted to be easily drawn out into the inguinal canal, and opened without the danger which would have attended the proceeding, had it been attempted while it lay deeply within the parietes. The sac contained a small quantity of very dark-coloured fluid and about six inches of small intestine of a dusky red colour, with one small black spot on its surface, the whole being strictured by the neck of the sac.

The stricture was clearly seen and easily divided, after which the contents were readily reduced within the general cavity of the peritoneum, and the wound closed by two sutures and adhesive plaster.

The extensive division of the abdominal parietes rendered extra precautions necessary against reprotrusion of the intestine, and graduated compresses and bandages were applied over the part. The pulse being weak after the operation, some wine and water were given to the patient, but no medicine was ordered.

At 9 p. m. the pulse had recovered its force, and the pain in the abdomen had diminished. He had taken some bread and milk, to which he was partial, and had not experienced any vomiting, though he had suffered from a little rising in the throat. During the visit the bowels were slightly relieved, and the patient thought he could void more, but was afraid to strain. Calomel gr. ij. with opium gr. $\frac{1}{4}$ were ordered to be taken at ten o'clock and repeated at four in the morning. An enema was also directed to be administered in a short time, unless the bowels should be plentifully relieved.

January 9th, 8 a. m.—Shortly after our visit last evening the bowels were copiously relieved, and the enema was not administered. After that period there had been ten or twelve evacuations. The pulse was good, the skin free from febrile heat, the pain in the abdomen almost gone, and the patient altogether much improved. He had taken milk and water frequently during the night, without rejection.

January 13th.—His improvement had been progressive since the 9th. On dressing the wound it was found almost entirely united by adhesion.

January 16th.—The wound was healed and the patient quite well.

Medico-Chirurgical Transactions, Vol. 26, *p.* 160.

71.—ON THE PATHOLOGY OF THE EAR.

By JOHN TOYNBEE, Esq , F.R.S., Surgeon to the St. George's and St. James's Dispensary.

[In a former paper, published by Mr. Toynbee, in the 24th vol. of the Medico-Chirurgical Transactions, (1841,) he gave descriptions of several dissections of the human ear, "as evidence of the fact that the lining membrane of the tympanic cavity is frequently in a diseased condition." In another paper, in the 26th vol. of these Transactions, he says:]

Subsequent dissections, and a careful investigation of numerous cases of deafness in living subjects, have led me to the conclusion that the most prevalent cause of deafness is chronic inflammation of the mucous membrane which lines the tympanic cavity; and that by far the greater majority of cases commonly called nervous deafness ought more properly to be attributed to this cause. This opinion derives support from an observation made to me by Mr. Swan, that in the whole course of his multiplied aural dissections he has not encountered one single instance of disease in the internal ear; an observation which embodies the result of repeated examinations to which I have myself subjected that part of the organ.

At the same time that I advance this opinion as an inference fairly deducible from more than a hundred dissections, I am far from denying the necessity of more extended researches previous to its validity being admitted.

It is worthy of observation, that though some of the persons from whom the specimens were taken, were known to have been afflicted with deafness during life, and others died of diseases which produced affections of the ear, yet the greater number, while living, were not supposed to be deaf.

This frequent occurrence of pathological conditions in the organs of persons not ordinarily esteemed to be deaf during life, loses some portion of its singularity when more closely investigated. Slight defects of hearing are so common as scarcely to excite even a passing observation, and more serious cases, from the very frequency of the disease,—perhaps the most common to which man is subject,—make but a slight impression. It may therefore be presumed that the ear is often in a pathological condition, though disease may not have proceeded so far as to produce such an extent of functional derangement as would cause serious inconvenience to the person affected, or reveal his infirmity to others.

The tympanic cavity is lined throughout by a fine membrane, forming externally the interior layer of the membrana tympani; from which it can sometimes be detached without much difficulty. In this situation it also serves as a partial investment to the chorda tympani nerve, and as a tubular sheath to the tendon of the tensor tympani muscle. Internally it covers the surface of the promontory and the membrana propria of the fenestra rotunda; passes on to the margin of the fenestra ovalis, where it is reflected on the surface of the stapes; and, lastly, surrounds the tendon of the stapedius muscle, and envelopes the ossicula auditus, with their connecting ligaments.

In the healthy state, this membrane is so remarkably thin and transparent, that its presence is not easily detected. It is composed of extremely fine and delicate fibres, and in structure exhibits strong analogy to the serous membranes. Over its surface extends a layer of very minute epithelial cells: these again are covered by others, which are flat, broad, and elongated, terminating in a row of well-developed and firm ciliæ. The supply of blood-vessels is abundant; but they are so minute, and so rarely distended with blood, that, in the healthy state of the membrane, they are imperceptible. In disease, however, these vessels are very much dilated and surcharged with blood. In young persons the membrane is highly vascular, and when successfully injected, appears pervaded by plexiform ramifications.

Beneath the mucous membrane lie the ramifications of the tympanic nerve from the glosso-pharyngeal. In addition to the branches of this nerve, which have been described by Mr. Swan and Professor Arnold, I have been enabled, by the aid of the microscope, to detect numerous filaments, distributed to every part of the membranous lining of the internal wall of the tympanum; and their presence seems to offer a natural solution of the cause of the very acute pain which is experienced when there is inflammation of this structure.

In a healthy state, a small quantity only of mucus covers the surface of the tympanic membrane: the constant motion of the ciliæ, already mentioned, tends no doubt to prevent its accumulation.

Inflammation of the mucous membrane of the tympanic cavity gives rise to various pathological conditions, which it seems to me may be divided into three stages.

In the first stage the membrane retains its natural delicacy of structure, though its blood-vessels are considerably enlarged and contorted, and blood is effused into its substance, or more frequently at its attached surface. Blood has also been found between the membrane and the membrana propria of the fenestra rotunda, and in very acute cases lymph is effused over its free surface. Instances of the presence of these conditions will be found detailed in the appended account of dissections.

The second stage is characterized by a variety of very important pathological phenomena; the principal of which are the following:—

1st. A very considerable thickening of the substance of the membrane, which is often pulpy and flocculent. In this state the tympanic plexus of nerves becomes concealed; the base and crura of the stapes are frequently entirely embedded in it; while the fenestra rotunda appears only like a superficial depression in the swollen membrane. Occasionally there is a collection of mucus.

2nd. Concretions of various kinds are visible on the surface of the thickened membrane. In some cases these have the consistence of cheese, and are analogous to tuberculous matter; in others they are fibro-calcareous, and exceedingly hard.

3rd. But by far the most frequent and peculiar characteristic of this second stage of the disease, is the formation of membranous bands between various parts of the tympanic cavity. These bands are at times so numerous as to occupy nearly the entire cavity. They are found connecting the inner surface of the membrana tympani to the internal wall of the tympanum; to the stapes; and to the incus. They have also been detected between the malleus and the promontory; as well as between the incus, the walls of the tympanum, and the sheath of the tensor tympani muscle: and they so connect various parts of the circumference of the fenestra rotunda, as to form a network over the membrana propria. But the place where these adhesions are most frequently visible, is between the crura of the stapes and the adjoining walls of the tympanic cavity: this, for example, was the case in twenty-four instances out of a hundred and twenty dissections—being a fifth of the number. In one dissection, the bands of adhesion were five in number: and in other instances they were so strong, that, in removing the stapes, the mucous membrane was torn from the surface of the promontory. Sometimes, so broad and expanded have been these adhesive bands, as to have assumed the appearance of a membranous veil. They have also been known to contain blood and scrofulous matter. In some examples the surface of the promontory is rough, and in two instances the membrane attached to the base of the stapes was ossified, and the anchylosis of the latter to the fenestra ovalis was complete.

It must appear obviously impossible, that many of the remarkable phenomena which have just been pointed out can be present, without the co-existence of functional derangement, more or less serious, in the organ of hearing. The thickening of the mucous membrane, and deposition of mucus, must necessarily interfere with the course of sonorous vibrations towards the membrane of the fenestra rotunda, and hinder the free action of the stapes.

The bands of adhesion connecting the stapes with the walls of the tympanum, cannot do otherwise than impede the natural movements of the former, which has very frequently been found so firmly attached to the fenestra ovalis, as to require considerable pressure with the scalpel to disengage it. Morgagni states, that he found the cavity of the tympanum intersected by numerous membranes, which impeded the movements of the ossicula; and it appears highly probable, that these bands of adhesion produce irregular movements in the ossicula. I am inclined to ascribe deafness, and many of the distressing symptoms that often accompany it, as noises like the rushing of waters, &c., to the continued pressure exerted on the contents of the labyrinth by the stapes being drawn inwards, as a consequence of the formation and subsequent contraction of the adhesions. In this opinion I have been strengthened by the examination of living persons, having frequently observed, that where the membrana tympani has been removed by disease, or where the contents of the vestibule have not received any impression through the stapes, (as in the instance of the latter bone being anchylosed,) the patients have heard better than those where satisfactory evidence existed, that the disease consisted in the thickened and adherent state of the membrane under consideration.

Another effect resulting from the pathological conditions apparent in this stage of the disease, seems to be deserving of very attentive consideration. From the interesting researches of Dr. Wollaston, and the more recent admirable and satisfactory experiments of Professor Müller on the physiology of hearing, it would appear that too high a state of tension of the membrana tympani is an obstacle to the transmission of the sonorous vibrations to the internal ear. In several of the dissections, it will be observed that the membrana tympani was bound to various parts of the tympanic cavity by firm bands of adhesion; that in others, the tendon of the muscle was surrounded by thick membrane, while occasionally both it and the substance of the tensor tympani muscle were atrophied. All these changes must most certainly exert an injurious influence upon the membrana tympani; and from them doubtless arise many of the phenomena observable in deafness.

In the third stage of inflammation of the tympanic mucous membrane, it becomes ulcerated, the membrana tympani is destroyed, and the tensor tympani muscle atrophied. The ossicula auditus are diseased, and ultimately discharged from the ear, and the disease not unfrequently communicates itself to the tympanic walls, affecting also the brain and other important organs. Of this class of diseases I am about to treat at length in a separate communication.

[In 120 dissections made by Mr. Toynbee there were 20 ears in the first stage of inflammation of the tympanic cavity, 65 in the second stage, 6 in the third stage, and 29 in a healthy state.]

Medico-Chirurgical Transactions, vol. 26, p. 298.

72.—*On the Treatment of Deafness, by Puncturing the Membrana Tympani.* Sir Astley Cooper wrote a memoir on this subject in the "Philosophical Transactions," and shewed that the cases likely to be relieved by the practice were those in which the Eustachian tube was permanently closed, or when blood had been extravasated behind the membrane. To those cases other pathologists have added "a morbidly thickened and cartilaginous condition of the membrana tympani" itself. In the last number of the *Northern Journal*, we find an interesting communication on the results of the operation, by Dr. Mercer. This gentleman has performed it in several cases. He gives a table, which includes fifteen. Of these, six were performed for chronic thickening of the membrane, and the remaining nine for obstruction of the Eustachian tube. One case alone, and that of the latter affection, succeeded in the restoration of hearing. The operator then agrees with Itard in saying that "nothing is more rare than the cure of deafness by perforation of the membrana tympani." He then details at length the history of an instance of idiopathic hæmorrhage into the cavity of the tympanum. In this case, deafness, which was complete, was removed by the operation. As the example is an instructive one, we shall allow the author to describe the local appearances, the mode of operating, and the instrument:—

"The membrana tympani, instead of its normal, transparent, gray appearance, had a dull brown colour, and was slightly congested at the margin; the vertical line, indicating the handle of the malleus, was lost in the surrounding colour, and the membrane, instead of presenting its concave appearance, seemed pushed outwards into the meatus. On touching it with a probe it was almost insensible, and pressure against it produced an elastic pitting. The head was carefully supported, with the left ear turned up, and the auricle drawn towards the vertex. The speculum being introduced as far as the second curve of the meatus, and then expanded, with a clear and steady light, the anterior and inferior part of the membrane was perforated, and a small portion of it removed by an instrument, which consists of a fine but strong steel needle, two inches and a half long, and the handle of an octagonal form, one and a half inch in length. The cutting or drill head is spear-shaped, one-sixth of an inch long, and one-eighth in breadth at the shoulders, where the edges are turned over. The point and edges are very sharp. Each of these edges is hook-shaped, one turned forwards and the other backwards; and when thus viewed longitudinally at their broadest part, they resemble the italic letter *f*. On being brought in contact with the membrana tympani, the handle is made to rotate between the thumb and fore-finger, and this being communicated to the cutting point, it perforates the membrane similar to a drill, at the same time that the averted edges are causing a considerable loss in its substance."

The subsequent treatment consisted chiefly of injections of warm water, and inflating the cavity with air, through the Eustachian tube. Dr. Mercer observed that the average time for reproduction of the membrane, when allowed to take place, was about four days.

Lancet, Nov. 23, 1845, *p.* 258.

73.—CURE OF OVARIAN DROPSY BY PRESSURE, &c.

By Isaac B. Brown, Esq., Consulting Surgeon to Paddington Lying-In Charity.

[In Retrospect X, Article 63, we noticed some cases of Ovarian Dropsy successfully treated by Mr. Brown, by bandaging, mercurials, and diuretics. He has published another case, in which equal success was obtained by similar treatment.

The patient, a young lady twenty-seven years of age, had been gradually increasing in size since puberty. Dr. Merriman, Dr. Lee, and others, on being consulted, diagnosed ovarian dropsy, but no one advised any curative plan of treatment. Having had Mr. Brown's paper sent her by a friend, she put herself under his care, by the advice of Dr. Ely, of Rochester, her ordinary medical attendant.

The body was swelled to the size of a seven months' pregnancy, most perceptible on the left side. The edges of the tumour could be clearly circumscribed, and fluid felt within its walls. Her health was considerably affected, and her mind was in a desponding state, but she readily consented to try Mr. Brown's treatment.]

On examining per vaginam, (says Mr. B.), I fonnd the os uteri perfectly healthy, and menstruation had always been regular. I found her measurement around the body, midway between the umbilicus and pubes, was exactly thirty-seven inches. I ordered her the following pills and mixture:—

℞ Blue pill, ʒi; powdered opium, gr. vj. Make into twenty-four pills, two night and morning.

℞ Acetate of potass. ʒv; tincture of squills, ʒi; spirit of juniper, ℥i; bicarbonate of potass, ʒi; water, ℥xii. A mixture; two table-spoonsful three times a-day.

To rub the mercurial ointment into the thighs every night, and to apply flannel bandage round the abdomen, as *tightly* as she could bear it; to take nourishing diet and exercise in the air.

August 20th.—Gums slightly affected. Continue everything as before; adding to the mixture infusion of gentian, ℥iv.

This plan of treatment was carefully continued, and it was soon found that the size of the abdomen decreased considerably; in all, up to Sept. 17th, *four* inches. I now considered it a favourable time to tap the cyst, and draw off the fluid. Her health was much improved, and her spirits more cheerful and buoyant.

September 17th.—In the presence of my excellent friend, Mr. Samuel Lane, and Mr. Ely, I placed her on the edge of the bed, resting her feet on a chair, and introduced the trocar midway between the umbilicus and pubes; immediately a dark-coloured albuminous fluid, exactly resembling coffee not quite clarified, freely escaped, when it suddenly stopped, I thought, at the time, from the bandage being too suddenly tightened above the trocar, thus pressing the walls of the cyst over the mouth of the instrument, and preventing any further escape of the fluid, six pints of which had been drawn off; but on careful examination, I could feel another cyst at least, and I fancied I could make out two, but as the patient was faint, I placed her in bed, and applied, *very tightly*, the flannel bandage. She expressed herself as feeling more comfortable, and much relieved by the loss of the fluid.

[The mixture, pills, and ointment were continued after the operation, as well as tight bandaging, and a general improvement in her health and appearance was speedily manifest. Ten days after operation she had decreased an inch in the measurement below the umbilicus, and, by the 27th November, half an inch more. It being then three weeks since any perceptible change had taken place, her health being good, and her gums still under the influence of mercury, the cyst left at the last operation was tapped, and about five pints of clear straw-coloured fluid drawn from it. When this had ceased to flow, another cyst on the left side could be felt, from which about six pints of coffee-coloured fluid, much resembling the first, was taken. As no more fluid could be felt in the abdomen, adhesive strapping was applied, and a little wine and water given; then some napkins,]

Doubled up and applied one over the other, were placed over the cysts, and *firmly* bandaged down with flannel bandage, passed four times around the body *over* the hips; and, fearing it might slip up, on account of the roundness of the hip-bones, a silk handkerchief was placed round the thigh, first tacking it to the *lower* edge of the bandage, and then tied at the hip; this was done on both sides. She was now placed in bed, desired to rub in the mercurial ointment to the thighs, and to continue the pills and mixture as before.

[The measurement was now 5½ inches less than after the first operation. No bad after-symptoms occurred; the bandages had frequently to be tightened; mutton-chop with sherry-wine and water for diet. On the fourteenth day of the second operation she was allowed to get up and walk about a little; on the 19th the mercury was discontinued, and the quantity of acetate of potash and tincture of squills increased; on the 26th she went to church; and on the 1st of January, 1845, making the 36th day after the second operation, she was examined, when a hardened substance, which felt like collapsed cysts, could be felt on the left side, but no fluid; and on the day following she was allowed to leave town.

A fortnight after, she called with Dr. Ely; considered herself quite well; her friends all much pleased at her altered appearance and continued good health.

The assertion that in ovarian dropsy there is no absorption of the fluid, and that diuretics have no influence on the disease, has frequently been made. Mr. Brown's opinion, however, is decidedly in favour of such influence. He had all the fluid this patient drank carefully measured, and also all that passed from the bladder, and found that in thirteen weeks 74 pints more fluid were voided from the system than were taken into it.]

Lancet, April 5, 1845, *p.* 379.

74.—ON THE EXTIRPATION OF DISEASED OVARIA.

By Dr. Ashwell, Obstetric Physician to Guy's Hospital, &c. &c.

[The following is the opinion of Dr. Ashwell on this subject:]

The progress and termination of encysted ovarian dropsy, have become subjects of the deepest interest, owing to the efforts lately made to cure the disease by extirpation. Whether this be a desirable, or even a defensible operation, must mainly depend on the known course of the disease, when either left to itself or treated with a view to palliation only. If it could be proved, in the majority of cases, that the malady did not shorten life nor induce severe suffering, few more operations would be undertaken. But the examples of this kind are, it is to be feared, only exceptional; and yet I cannot divest myself of the idea, if our records were accurately kept, that a more favourable view might be correctly taken of the palliative, or indeed of any treatment which did not involve the necessity for this hazardous extirpation. Certain it is, that *many* women have lived to old age, who were the subjects of the disease; and although a less number comparatively survive many years after tapping has become necessary, yet a collection even of these would go far to prove, that paracentesis is not by any means so fatal in this respect as has been supposed. Sabatier examined the bodies of several women who had carried these encysted tumours during half a century, without alarming derangement of health; and the memoirs of the French Academy of Surgeons prove, that it may last 58 years; while Nauche, as a summary of his own views, says, 'dropsy of the ovary, then, is not a very alarming disease, unless it be very ancient and very voluminous.' The cases of frequent tapping recorded by Martineau, Portal, and many other surgeons, amply attest the protracted duration of life in association even with this stage of the affection. Nor, in a calculation of this kind, must it be forgotten, that numerous women have become pregnant, and have been many times safely delivered, notwithstanding a dropsy of one of the ovaries. Such cases have fallen under my own observation, and I could add others also where the malady, although of a considerable size, has existed many years without tapping, and without indeed any other than mere palliative treatment.

These considerations are entitled to great weight when determining the propriety of extirpation, uncalled for by present and great evils; or where the operation, from the enthusiastic views of its patrons, is urgently recommended as a preventive of mischiefs which they deem, but not always on good grounds, to be prospectively inevitable. To operate, where the patient strongly desires it, from a conviction that her sufferings and the frequent repetitions of paracentesis, will otherwise prove speedily fatal, may not involve any distressing responsibility, especially where the condition of the tumour leads to the supposition, that the case is pathologically a favourable one. But there are examples selected for operation far different from this. Take, for instance, a case which occurred to me a few months ago. A lady travelled to town from a considerable distance, anxious to have extirpation performed. On inquiry, I found she was 62 years of age, had never been tapped, although ovarian dropsy had existed for more than half her life. There was scarcely any suffering beyond weight and pressure, although the tumour was of immense size and partly solid. In such a case, it would have been highly culpable to have operated; and yet a surgeon, over zealous about the removal of ovaries, had induced the firm belief that it ought to be done. I need scarcely add that the patient, after being made acquainted with the great danger of the operation, was perfectly satisfied to remain as she was. Nor will the practitioner be less perplexed and distressed by such a case as the following, which occurred within my observation not long since:—A young woman, under 22, had ovarian dropsy; her countenance bespeaking excellent health, and her history confirming the impression. Without interference, many years might have been added to her existence; and as one of the fortunate incidents of life, it might have so happened, that the tumour should cease to grow. But unhappily she was convinced that extirpation was proper; the operation was most ably performed, and in a few days she died. These certainly are not the cases in which removal ought to be practised. If the operation is to become established, of which I have the strongest doubt, it must be confined to examples of the malady where tapping has already been so often performed as to preclude, from the experience of similar cases, any idea that it can ever be dispensed with; and where, we are confident, that great suffering must lead to early death. Perhaps this may be regarded as too limited a view of the value of extirpation, but it is, I think, the correct one. In such cases, if the diagnosis excludes the belief that there are serious adhesions, or malignant and solid growths complicating the tumour, and if the patient strongly desires it, the operation is defensible. In all other examples it can only rest on the patient's own views of her future prospects, and on a calculation of chances. She might live many years and without much suffering; but she may die in a few years after great suffering: she determines, therefore, being courageous, and probably strongly urged by her surgeon, to run the risk of immediate death for the hope of immediate and radical cure. Whether she has done wisely to submit to such a hazard, a successful operation can scarcely prove; that she has happily secured her safety, through imminent peril, such an operation does prove. Lithotomy, operations for hernia, and for securing large arteries, rest on different grounds. That they are essential to the patient's life, is a full justification of their performance; for in all, even if not dangerous at the moment, it is certainly known that life will soon be destroyed, either by fever, gangrene, or loss of blood. Such, it has been proved, has not been the case in many of the fatal operations lately performed for extirpation of ovarian encysted tumours. It does not appear that statistics more favourable even than we have any right to expect, will materially change the aspect of the circumstances under which this operation is to be performed. It must, probably, from the impossibility of determining the real character and adhesions of the growth, ever remain an eminently uncertain operation. The extirpation, we are assured, by the operators themselves, in a fit case, is far from difficult—would that it were more so—for then it would not be so readily undertaken. If it required as much surgical knowledge and skill to make these large and brilliant abdominal incisions, as to tie the subclavian artery or to perform a trying operation of lithotomy, the lives of many women would have been already spared, and fewer would be sacrificed for the future. What would be thought of the feasibility of any other operation involving life in the most imminent hazard, if we discovered that out of 67 cases where it had been attempted, it was, *from absolute error of diagnosis*, *incapable of completion in eighteen;* that of the remaining 49 patients, where the extirpation was effected, *sixteen died* and *two were not cured;* so that out of the whole number 67, *the operation failed in thirty-six and succeeded in thirty-one*, less than one-half. Such results are distressing, especially when we hear no greater doubt expressed about the operation itself, but only higher confidence in its value and greater laudation of the operators. We willingly concede presence of mind and ability to many of the extirpators of ovarian cysts; but we are unable to discover (for the later operations have been quite as unsuccessful from unfitness of the cases as the earlier ones) that any advance has been made in diagnosis. And, when the tumours themselves are examined after death, when the malignancy of many of them is recognized, and their firm, almost indivisible ahhesions, and their immovable masses of new and morbid substance are brought to view, it is next to impossible to entertain any sanguine hope, that our means of diagnosis can ever be much improved.

Medico-Chirurgical Review, Jan. 1845, *p.* 41.

75.—ON THE REMOVAL OF CAULIFLOWER EXCRESCENCE.

By W. F. Montgomery, A.M., M.D., Professor of Midwifery, &c., Dublin.

[In October, 1842, Dr. Anderson, of Glasgow, published, in the London and Edinburgh Monthly Medical Journal, "the results of some very accurately conducted investigations, by the microscope and otherwise, into 'the anatomical structure of the cauliflower excrescence of the os uteri.'" The patient whose disease afforded the object of Dr. Anderson's paper, came under the care of Dr. Montgomery, in 1843, when the disease had again acquired considerable size and effected deplorable inroads on her constitution.]

On examination, says Dr. M. I found the vagina nearly filled with a rather firm, rough, lobulated tumour, around which I could readily pass my finger, but I could not find the os uteri, from the margin of which the tumour appeared to spring, as well as from the contiguous portion of the vagina; the tumour bled readily on being touched, and was much more solid in some parts than in others.

By the speculum, the tumour was readily brought into view, and after wiping off its surface, a layer of coagulated blood with which it was covered, it appeared of a dull, dirty, whitish, or light drab colour; its surface uneven and studded with a number of small tubercles, like the head of a cauliflower. This patient had been previously operated on in November, 1842, when the tumour then existing was removed by a ligature, in doing which, portions of it were broken off, which afforded Dr. Anderson the opportunity of making the microscopical investigation into the structure of this fungous growth, already alluded to; but it soon grew again, and in the intervening four months had acquired a considerable size.

Saturday, March 4th. I included the whole of the tumour in a ligature, which I placed as high up as possible; its application gave no pain, and very little discharge occurred. After applying the ligature, I drew it up one inch, and ordered the patient an opiate.

The ligature was tightened every day, and doing so was followed by sharp abdominal pain, without any accompanying tenderness, or acceleration of the pulse; indeed pressure over the pubes gave her so much relief, that she constantly kept her hand firmly pressed over that part. Anodyne fomentations with draughts containing acetum opii, relieved her pain; the pulse never rose above 80, and she was quite free, throughout, from any constitutional disturbance.

On Sunday the 12th, I found that I could not draw the ligature any further, it had evidently come home to the top of the canula, and yet, neither it nor the remains of the tumour would come away; and being unwilling to allow the latter to remain any longer, I introduced a curved scissors, and removed the greater part of it.

Thursday, 16th. I exposed the upper part of the vagina by the speculum, and seized the remaining portion of the root of the tumour with a dressing forceps, when it came away completely, leaving the surface behind it clean and healthy-looking; it sprung from a space about the diameter of a half-penny, engaging the margins of the os uteri, and the vaginal mucous membrane, towards the left side.

On examining carefully the substance now brought away, I found that I had removed, not only the morbid growth, which was now reduced to a mere bundle of ragged filaments, but also the parts from which it sprung, namely, the os uteri, and a portion of the vagina. The bloody and serous discharges, and the peculiar abdominal pain, now ceased altogether, and a discharge of healthy pus took place from the exposed surface; this, after a few days, threw up exuberant granulations, which I touched with the nitrate of silver, and a clean and healthy cicatrization was completed in three weeks from the time of the removal of the parts.—On the

7th April, she menstruated naturally, and on the 17th April, I examined her with the finger and with the speculum, and found her free from any remains of the disease.

I have since seen and examined this woman several times, the last occasion having been on this day, (November 28th). She has menstruated regularly and fully during the whole interval of time, amounting now to nearly twenty-one months.

Her general health is perfectly good; she is improved in aspect, and increased in flesh: she complains of nothing except some pain in her back, especially at the time of menstruation, which still continues regular.

There is no projection of the cervix uteri into the vagina, and the os uteri has entirely lost the defined margins which are natural to that part, in general; it is very much closed, and gives to the finger the feel of a small puckered cicatrix; but all the parts are quite healthy and sound.

[Dr. Montgomery thinks that the operation by ligature will be more successful when the tumour has acquired a large size, on account of its origin or neck being narrower than the mass, somewhat resembling a polypus—consequently a ligature may be much more easily fixed and retained, and more likely to be applied at the base. Moreover, it is more likely when the tumour is large that the neck of the womb from which it arises will be more elongated, and may thus be ligatured with ease. Even although a radical cure may not be accomplished, yet the ligature is strongly recommended, as at any rate a large mass of disease is for the time got rid of, and the health of the patient will often be considerably improved. The only objections are the danger of hæmorrhage, and great constitutional disturbance, by including a portion of the uterine substance in the ligature. Even if hæmorrhage did occur, which is very seldom the case, it might be arrested by the ordinary means, and the risk of including a portion of the womb must be encountered, although this may not be so dangerous as many suppose. After the extirpation of the tumour, Dr. Montgomery recommends—]

That the surface from which it has been removed should be freely touched with some active caustic, such as the strong nitric acid, fluid nitrate of mercury, nitrate of copper, or perhaps with the actual cautery, which Dr. Johnson states proved eminently useful in a case lately under his care.

Dr. M. observes that one of the most distinctive characters of this growth, when brought under inspection, during life, is the *semi-transparency* of many of the superficial granules; which present to the eye very much the same appearance as the vesicles occasionally visible on the surface of the ovary.

Dublin Journal of Medical Science, Jan. 1845, *p.* 402.

76.—ON LITHOTOMY.

By Robert Liston, Esq., F.R.S., &c. &c.

[We have in former volumes detailed the views of some of our most eminent authorities on this subject; and we have now the pleasure of placing before the reader those of Mr. Liston, as taken from his Lecture on this subject in the Lancet.]

When you have determined to cut into the bladder to extract the stone, the proper plan of doing so is by the perineal section. It has been proposed to cut it out by a division of the rectum, but this mode is now abandoned. The operation was followed by disastrous consequences; many of the patients who submitted to it had a constant running out of water through the bowel. Then it has been proposed, also, to cut above the pubes, and this plan is still adopted in Paris, but only by a few surgeons. This was an operation which at one time was thought would do away with the perineal incision. It was practised in this country before the time of Cheselden, and even by this great surgeon and lithotomist at one time pretty extensively: and it was recommended strongly by Dr. Douglass and others. It is only had recourse to now where the stone is too large to pass through the outlet of the pelvis; I shall here, therefore, confine myself to a description of the perineal or lateral operation.

Having first, then, ascertained the presence of a stone by the introduction of a sound, you introduce the grooved staff or director, as large an instrument as you can get comfortably into the urethra, and you perhaps bring that into contact with the stone. This is given into the hands of an assistant. I ask the assistant to hold the staff firmly hooked up under the pubes, so as to give as much room as possible for the incision, and to keep it away from the rectum. Your external incision is to be made in the space between the anus and the tuberosity of the ischium, in such a way that you shall avoid, on the one hand, the rectum and the bulb of the urethra, and, on the other, the pudic artery. The incision should be commenced about opposite the bulb, and carried down in this ischio-rectal fossa, as it is now the fashion to call it, towards the border of the gluteus maximus, on the left side. It is in this incision, and not in cutting the deeper parts, as novices imagine, that there is any risk of wounding the bowel. Should you be able to use the left hand firmly and well, if the operation has been performed on the left side some time previously, and any stone, or portion of the stone, has been left, you may cut on the right side of the perineum, although this is not absolutely necessary. Well, then you carry the incision through the skin, the fatty matter, and the superficial fascia, at once. By this incision, probably the transverse muscle of the perineum, if present, will be cut across, as well as some superficial arterial branches. You begin your incision low down, and carry it back by the side of the anus; your external incision must be well placed and tolerably free. There is no use for carrying it to the border of the gluteus maximus, as some one would have us do, so as to expose and divide some of its fibres, nor will any good come of dividing *all the muscles* of the perineum, as Benjamin Bell advised. "By a continuation of the incision," says he, "the erector penis, accelerator urinæ, transversalis perinei, and levator ani, should be cut;" and he enters into a long argument to prove that the operation is rendered more easy and safe by their division. Better cut than bruise and tear, he says. He might, with as much propriety, have counselled us to scalp the patient, as to cut the two first-named muscles. But old Benjamin Bell was notoriously ignorant of anatomy, as have been many others who have attempted stone operations, and possibly did not know very well the subject under discussion. He had seen, no doubt, once or twice, the muscles of the perineum at a respectable distance in the whirling of the demonstrating-table, and committed their names to memory. Dissection was not then much in vogue. He had named the parts originally, perhaps, to show his knowledge, and appears to have been much astonished when Dr. Monro remonstrated with him, and told him how absurd it was to cut so recklessly. He seems to have been, however, obstinate in error. Your great object must be to get cleverly to the membranous portion of the urethra, and by all means to avoid the bulb. If you were to cut open the urethra extensively, as many, from their style of operating, must do, this may be attended with unpleasant consequences, and the patient may be annoyed by perineal fistula for some time afterwards. You must endeavour, before interfering with the canal, to get as near as possible to the neck of the bladder; you therefore pass your finger into the space betwixt the erector penis and accelerator urinæ, so that its point rests on the deep fascia. Thus you make a sufficient opening into, and also slightly across, the muscular fibres behind it, (for very few indeed of the fibres of the levator ani require to be divided,) the membranous portion of the urethra is then laid bare, and you feel the groove of the staff distinctly through it; into this you press the nail of the forefinger. In dividing the deeper parts, the greatest possible caution must be used, and the edge of the knife must on no account be turned upwards, lest the artery of the bulb should be interfered with. You then, if operating upon a fleshy or corpulent patient, introduce a dissecting knife, the same with which the preliminary incisions have been effected, with the blade and handle a little larger than usual, over the back of the finger and nail, into the groove of the staff, the *back* of the knife being directed towards the groove. Sometimes the perineum is so deep that there is difficulty in getting the finger to the point at which it should be entered, and if the knife were not long enough you would not reach the bladder. Children, and patients under puberty, and thin adults, can be cut, as you have seen me constantly practise, with the ordinary operating scalpel. Well, then you push the knife into the groove of the staff at this place, and not before. You should not, in fact, enter the knife into the groove of the staff till you feel the apex of the prostate. Your object now is to cut the neck of the bladder to a very limited extent, and to notch, as it were, but very slightly, the prostate. This is done by carrying the knife onwards, the edge being directed downwards and onwards. Remember well that you cannot cut the prostate to any great extent without endangering the doubling of the pelvic fascia. You cut the gland in the direction downwards and outwards, for about half an inch, or a little more. The direction of the two incisions—that of the superficial, and this of the deep parts—corresponds, so that the extraction of the stone may be easily accomplished; and the external opening being lower than the other, the escape of fluids is not interfered with. The boundary, which must not be overstepped, is seen beyond the point of the incision in the gland. You then withdraw the knife carefully back over your finger, and are able, without difficulty, to pass the finger into the cavity of the bladder. By operating in this way, you plug up the opening, and prevent the urine from escaping with a gush, as happens when the gorget is used. My excellent colleague, Mr. Cooper, I recollect well, not having seen this mode of proceeding, imagined, in some of my first cases in this hospital, that I had somehow missed getting into the bladder, at the time that I actually had my finger in contact with the stone. The prostate is very dilatable after slight incision; it is a firm structure, but still it yields before the finger, and perhaps it splits a little. It is safer to split the prostate thus, than to cut it freely, because the substance of the prostate will thus yield, but not the reflexion of the fascia.

Now, as regards the place and extent of the external incision, I believe you will find but little difference of opinion amongst practical surgeons, who have had opportunities of performing this operation pretty frequently. All agree that the incision should be made pretty long, and that it should extend by the side of the anus. Some may wish it placed a line or two nearer the tuberosity of the ischium than others; but all are not quite so well agreed as to the direction and extent of the opening to be made in the neck of the bladder; and there are some who still advocate strenuously the making of free and unbounded incisions, not only of the prostate, but of the parts beyond its base. "Cut the prostate gland through the whole extent of its left lateral lobe;" "cut fairly through the prostate," is, or was, the advice of a celebrated professor in the North. "Make your incision through the left side of the prostate," says another hospital surgeon. "Are we not justified in inferring that the advocates for a small opening are promulgating the worst advice that can be offered to the practitioner; for," argues Mr. Cooper, "a clean and large incision is by no means so dangerous as a bruised wound;" and he quotes the high authority of John Bell in support of his opinion. This is all very true as a general principle, but to all rules, as you know, there must be exceptions. Let the division of skin, cellular and muscular tissue, be as free as possible here and elsewhere, but beware how you interfere, by free incisions, with hollow viscera, with the serous cavities, and with the fasciæ bounding and protecting regions, occupied by loose filamentous tissue.

If worth while, authorities of great weight might be quoted in favour of small incisions in the neck of the bladder, as, for instance, Le Cat, Payola, Pelletan, Callisen, and Scarpa. The latter truly admirable anatomist and surgeon advises that the gland should, in adults, be cut to the extent only of five lines, and of two in children. He has shown, that after this limited incision, the parts can be made to yield, and without any force, without any such dilatation as practised in the Marian method, so as to allow stones of the ordinary size to be brought away easily. Scarpa reprobates the division of the base of the gland, and any interference with the neck or side of the bladder as likely to be followed by infiltration, gangrenous abscess, and probably death. Whilst he is thus particular as to the cutting of the glandular substance, he does not seem to have been aware of that part from the division of which danger really resulted. If he had, he would assuredly not have had his gorget fashioned so as to cut upwards and outwards.

We find that the orifice of the bladder is capable of dilatation to a certain extent, and after slight incision of the base of the prostate, say to no greater depth than half an inch, that by the gentle and gradual introduction of the finger, or of a blunt gorget, a space can be obtained through which a stone of moderate size can be extracted without the least violence, and without any bruising of the tissues.

But I have said that the orifice of the bladder is capable of dilatation to the extent of five or six lines in diameter. It will admit the point of the little finger readily in the dead body and in the living. I have, without force, introduced my forefinger, none of the smallest, into the cavity of the bladder. But dilatation cannot be carried further without bruising and laceration of the tissues, and dreadful suffering to the patient. What, then, let us inquire, offers the resistance? The late Mr. Tyrrell demonstrated in the bladder of the horse what he called an *elastic* ring surrounding the neck of the bladder. This I have examined carefully. He was in error in describing the tissue as elastic. There is, under the mucous lining of the bladder, both in man and in the lower animals, abundance of elastic tissue with the real peculiar curling fibre. About the neck of the bladder this is still more abundant, and no doubt fulfils an important function in closing perfectly, by the folds of the lining membrane, the neck of the viscus—this closure only overcome by the action of the muscular fibres of the bladder, assisted by the muscles of the chest and belly, resisted by the levator ani. The circular muscular fibres, the true sphincter of the bladder, is only, it would appear, called into powerful action under extraordinary circumstances. This elastic tissue would afford no resistance to efforts at dilatation. But there is at the base of the gland a firm and dense *fibrous or ligamentous* band surrounding the orifice of the bladder, into which the muscular fibres of the organ are inserted. This it is which cannot be overcome by means employed to dilate the part. It must be torn in the efforts continued and pushed to extremes. If this band is cut, the other tissues yield at once readily.

and to an inconceivable extent, without any danger of injury to the ilio-vesical fascia.

In young subjects of both sexes, this band of dense fibrous tissue is very apparent, and the orifice of the bladder, and commencement of the urethra, is very unyielding. As individuals advance in years, the fibrous tissue seems to be replaced so far by a more elastic material, and we find, accordingly, that the parts are much more dilatable.

Well, then, this limited incision being made, and the prostate and neck of the bladder dilated gently and gradually, you pass in your finger with facility, and where the perineum is not over deep, you are able at once to feel the stone, whatever may be its size. If it is lying across, you can turn it about, and put it in a more favourable position. Through the opening made with a common knife in running it along the groove, without any attempt to cut in withdrawing it, dilated gradually and gently by the finger, you are able to introduce a common pair of forceps, and take out a stone of considerable size, without, as I have said, any force whatever, as the parts yield so much. But if the stone is too large to come away, when you have got hold of it with the forceps, you pull it down, insert the knife over the blades of the forceps, and notch the prostate on the other side; or you may do this before introducing the forceps. You have got your finger into the bladder, and made sure—what you had shrewdly suspected—by sounding, that the stone is of considerable size. The patient is not corpulent, and has not a large prostate, and under these circumstances, you pass a sharp probe-pointed bistoury over to the left side of your finger, and cut the right side of the prostate to about the same extent as the left. The opening is then found to be dilatable to a great degree, the forceps are introduced, and any stone can be brought away that will pass through the outlet of the pelvis, and without interfering with the pelvic fascia. The design in making this incision thus, is to prevent, as far as possible, extravasation of urine. It may become extravasated in the external cellular tissue without doing any great harm in the end, bnt if the division between the external and the internal parts is broken up, and the urine escapes into the loose tissue in the pelvis, the patient is almost inevitably lost. You guard against this by the mode in which you make your incision, and you ensure it still further by introducing a proper tube. This is by no means a modern practice. You find the use of a metallic tube recommended by Paré, by Francois Callot, Dionis, Le Dran, Scultetus, and others. It was used to allow blood, urine, and matter, to escape. It was also found useful in cases of hæmorrhage, the wound being stuffed, whilst the discharge of the urine was not impeded. I have uniformly, from the first time I cut for stone, employed a gum elastic tube long enough to enter the bladder fully, and to its use I attribute a good deal of my success. It is retained in no case more than forty-eight hours, and in children may be withdrawn in twenty. It causes by its presence not the slightest annoyance or danger, and assuredly obviates many accidents, such as retention from lodgment, or extravasation of blood from inflammatory swelling of the wound, from premature adhesion of it, and above all, it gives the urine no apology for passing into the cellular tissue.

Lancet, May 10, 1845, *p.* 514.

[As it is our duty to place before our readers the experience of all good practitioners, however different from each other, we publish the opinion of Dr. Warren, of Boston, an experienced surgeon in the United States.

He was led, a year or two since, to examine the merits of the bilateral operation closely, from two cases in which the gorget was employed having terminated fatally. In this investigation he frequently dissected the parts concerned, and the result was so satisfactory that he was induced to try it on the next cases that presented themselves.

The first was a man æt. 53. A sound when passed, was arrested about three-fourths of the length of the instrument, by a stone, evidently not situated in the bladder. The prostate gland was enlarged and hard.

On a subsequent examination the sound was passed on one side of the stone apparently into the bladder. Further examination disclosed the existence of two stones, one occupying the neck of the bladder, preventing its closure, and thus causing incontinence of urine, the other in the bladder, which was, however, excessively contracted, from not being at any time dilated with urine.

Leeches were applied to the perineum, the bowels carefully regulated, small doses of nitrate of potass given occasionally, and nourishing diet. Under this treatment, aided by the use of opiates, he improved so much as to be thought in a fit state for operation. It appeared to Dr. Warren that the lateral operation could not be judiciously employed for the following reasons:—]

First, a stone being apparently wedged in the prostate gland, and occupying the whole space of the urethra within that part, an incision of the left lobe of the prostate, of sufficient size to remove this stone, could not be made with the usual instrument, on account of the interference of the stone with the extremity of the probe pointed knife, or gorget.

Second, an incision down to the prostate, in the part where the lateral operation is usually performed, would be unnecessarily circuitous.

Third, there would probably be a difficulty in manœuvering the forceps in the deep wound made in the lateral operation, in consequence of there being no cavity about the stone.

For the reasons above stated, I was led to consider the practicability of other modes of removing the stone. Lithotrity, of course, presented itself in the first place, but a little reflection showed, that the objection to the use of the forceps in the lateral operation might hold with still more force in regard to lithotrity, since the want of room would prevent the opening of the instruments, which are used for seizing and breaking the stone.

The operation by the rectum could have been executed with great facility from the proximity of this part to the stone, and the great relaxation of the anus: the objection to this operation was the probability of a recto-vesical fistula.

Another mode of operating, which presented itself, was, the transverse incision of the perinæum, according to the method recorded in the works of Celsus, and since improved by Dupuytren and other distinguished surgeons. This manner of operating seemed to have the advantage, first, of conducting to the stone by the shortest route from the exterior of the perinæum, and secondly, that, in this manner, fewer and less important parts would be wounded than in any other. This method was, therefore, concluded on.

The patient was prepared by taking a purgative the day previous, and on the morning of the operation, a common enema, followed by another of two ounces of water, containing two hundred drops of the tincture of opium. The operation was performed February 5th, in the presence of the medical class, and various medical gentlemen of the city; and I was assisted particularly by Drs. Hayward, Townsend, and Jeffries, attending and consulting surgeons of the hospital.

In the first place, a sound was introduced to ascertain the existence of the stone, which was very readily done, because an instrument could not enter the bladder without striking the stone. The rectum was next examined, to ascertain if it were free from fæces.

After these preliminary arrangements, the patient's hands and feet were bound together in the mode usual in this operation. A staff of large dimensions, grooved as usual, was then placed in the urethra, conducted to the stone, and there fixed. A crescentic incision was now made across the perinæum, between the scrotum, on the fore part, and the verge of the anus, on the back part, its concavity looking towards the anus. This incision was two inches and a half long, three-fourths of an inch in front of the anus, with the two extremities of the wound directed towards the tuberosities of the ischia. It divided the skin, superficial fascia of the perinæum, adipose tissue, and exposed the bulb of the urethra. The latter was then raised, and the urethra being drawn by the staff towards the perinæum, while the operator passed his finger into the rectum, a longitudinal incision was made in the membranous part of the urethra, behind the bulb and in front of the prostate gland.

A straight, short, narrow, probe-pointed knife, with a long handle, was then passed along the groove of the staff into the bladder, with some interference from the stone, which prevented it from readily entering. The staff was now withdrawn, and the knife, supported by the forefinger of the left hand, was directed towards the left tuberosity of the ischium, cutting the prostate gland to the extent of three-fourths of an inch: the same was done on the other side.

The finger then passed freely into the bladder, pushing before it a considerable calculus, which could not have been seized in its original situation, on account of the difficulty in expanding the forceps. The knife was now withdrawn, and upon the finger remaining in the bladder, the forceps were introduced. By them the stone was readily struck, immediately grasped, and brought to the orifice of the wound: but having been seized by its longitudinal diameter, it could not pass, and was, therefore, dropped, and laid hold of according to the short diameter. It was then readily extracted by slight lateral movements, tending to the direction of the axis of the prostate gland. The finger was then passed into the bladder, and discovered another stone, smaller than the first, which was at once seized and extracted.

Not more than two ounces of blood were lost in the operation; and the time occupied was three or four minutes.

[About two months after the operation the patient was discharged, the wound nearly healed.]

Remarks.—The operation of lithotomy, according to the method of Celsus, has been rarely done in Great Britain, or in this country. It presents some advantages, which are well worthy the consideration of those who may have occasion to perform the operation of lithotomy. These advantages appear to be:—

First, that the parts cut are more simple in structure than those concerned in the lateral operation: the nerves and the blood-vessels are necessarily smaller as they approach the median line.

Secondly, the pain and hemorrhage are, consequently, less than in the lateral operation.

Thirdly, the access to the membranous part of the urethra, and to the bladder is more direct.

Fourthly, the prostate gland being more completely exposed, may be divided with more precision.

Fifthly, the opening into the bladder may be double the size of that made in the lateral operation, without increasing the danger of cutting the vesical plexus of veins, the prostatic fascia, or the internal pudic artery.

Sixthly, the danger of subsequent inflammation is decidedly less.

The principal objection to this operation is the risk of wounding the rectum. This is certainly very considerable: but by drawing the staff with the urethra and prostate gland, towards the symphysis pubis, and with the finger of the left hand upon or in the rectum, drawing out that intestine in the direction of the os sacrum, this danger will be found less, perhaps, than in the lateral operation. It may be objected, that in the present case, the wound was longer in healing than it frequently is after the lateral operation. The reason of this, however, is to be found, not in the form and direction of the wound, or in the parts implicated, but in the morbid state of these parts, and general condition of the patient, previous to the operation.

Although I should certainly not feel justified in recommending this operation for general use, from the experience of a single case, yet so far as this experience extends, aided by the light afforded by many dissections, made with the view to this subject, I should feel disposed to employ this in most cases where lithotomy was required, in preference to the lateral operation.

[The second case was a boy, 14 years of age, who for five years had symptoms of stone in the bladder. On sounding, a stone was readily struck, which, on examining by the rectum, appeared to be nearly an inch in length, and about the same in thickness.]

The patient being placed on the table, his hands and feet were bound together, and the rectum was examined, to ascertain if it were free from fæces. A staff was then introduced, and the stone immediately struck: the instrument was then put into the hands of an assistant. The skin of the perinæum being made tense by the thumb and forefinger of the left hand, an incision of two inches was carried across the perinæum, midway between the scrotum and the anus, of a crescentic form, the points of the crescent looking towards the tuberosities of the ischia. The superficial fascia was next divided. The assistant was then requested to draw the instrument upwards, or towards the symphysis pubis, to make room between the urethra and rectum. By two cuts, the membranous part of the urethra was exposed behind the bulb, and laid open: the bulb itself being uncovered.

A straight probe-pointed bistoury, having a blade two inches long, was then pushed into the groove in the staff, and the operator was about to pass it into the bladder, when the patient drew back, and thus separated the two instruments. By means of the forefinger of the left hand, passed into the groove of the staff, the probe-pointed knife was readily restored to its situation in the groove, and then the operator, taking the handle of the staff in his left hand, and bringing it downwards, the knife passed along the groove into the bladder. No urine was discharged then, or at any period of the operation, except when the staff was introduced, at which time the little that had been secreted made its escape. Then striking the stone with the end of the probe-pointed knife, to ascertain its entrance into the bladder, the staff was withdrawn.

The forefinger of the left hand was next passed along the back of the knife, and served to guide its incision, which was made very small, at first on the left, and then on the right side of the prostate. The forefinger following the knife was applied in search of the stone, but not coming in immediate contact with it, and knowing the stone could be instantly found by the rectum, I introduced the finger into the intestine, and pushed up the stone towards the wound. Having enlarged the opening with a common knife, I pushed the stone directly through the wound thus made, and extracted it without the aid of the forceps. The opening of the bladder was, of course, the smallest possible, and barely allowed the stone to pass through. The loss of blood was very small: the operation ended, the patient was carried to his bed.

In the afternoon he had some pain, and being much accustomed to the use of opium, thirty drops of M. Munn's Elixir were given to relieve him. In the evening, five ounces of blood were drawn from the arm, as a preventive of inflammation; a precautionary measure I am in the habit of adopting after capital operations, in which there has been no great loss of blood.

On the next day, the boy was quite comfortable. A pledget introduced into the wound after the operation having come out, another was passed to the bottom of the wound; the urine having issued as much by the penis as by the wound.

No remarkable changes occurred afterwards: the pulse gradually sunk to ninety; the urine resumed its natural course, and the boy's appetite became quite outrageous, before he could with safety be indulged with food. In a week after the operation, he had half a pint of broth a day, on the tenth day some bread, and was allowed to sit up, and walk around.

On the fifteenth day, the urine had ceased to pass through the wound, and issued altogether through the urethra. The patient had already a control over it, which he had not enjoyed for many years. The wound, being free from the irritation of urine, was contracting and cicatrizing rapidly.

The result of this case confirms the favourable opinion made by the preceding. The simplicity of the operation, the comparatively small pain from the incisions, the facility of seizing and removing the stone, the very slight loss of blood, and the absence of any severe consecutive symptoms, are facts which concur in giving a favourable impression as to this mode of operating. Whether the results of a considerable number of cases would be equally favourable, cannot be determined but by a long series of trials.

American Journal of Medical Sciences, Oct. 1844, *p.* 294.

77.—TREATMENT OF ANEURISM BY COMPRESSION.

By Dr. Bellingham.

[Dr. Bellingham, one of the surgeons of St. Vincent's Hospital, when he first brought this subject before the Surgical Society of Ireland, had only met with three cases in which compression had been employed; that number has now increased to twelve. Of these eight were treated in Dublin, and in all the cure has been permanent. With regard to this mode of treatment, he says,—]

The principal improvement which has taken place in the treatment of aneurism by compression, consists in the mode of applying the pressure; that is, instead of employing a single instrument, we employ two or three if necessary; these are placed upon the artery leading to the aneurismal sac, and when the pressure of one becomes painful, it is relaxed, the other having being previously tightened, and by thus alternating the pressure, we can keep up continued compression for any length of time. By this means the principal obstacle in the way of the employment of pressure has been removed; the patient can apply it with comparatively little inconvenience to himself; time will not be lost owing to the parts becoming painful or excoriated from the pressure of the pad of the instrument; and as the pressure need not be interrupted for any length of time, the duration of the treatment will be necessarily considerably abridged.

Some of the success of the improved method of applying pressure must, however, be referred to the improvement of the instrument used. That which I employed (made by Mr. Millikin, of Grafton street), is a modification of a carpenter's clamp, which was invented by a patient under Dr. Harrison's care for popliteal aneurism, whom I had the opportunity of seeing several times, both while under treatment and after a cure had been effected. It consists of an arc of steel covered with leather, at one extremity of which is an oblong padded splint, the other extremity terminates in a nut, containing a quick screw, to which a pad similar to that of the tourniquet is attached. The principle of this instrument is exceedingly simple, so much so, that the patient can regulate its application himself, and it can be made of every size, so as to compress any vessel within the reach of compression. It appears to be a much superior instrument to that which was employed in the cases treated in the London hospitals, the application of which cannot be maintained for any length of time, without occasioning severe pain.

[Some of the advantages of this mode of treatment are then mentioned, and first, that "the employment of pressure is not attended by the slightest risk to the patient." This, together with its having proved successful in every case in which it has been employed, forms a powerful argument in favour of this treatment over that by ligature, which, even when most carefully performed, is liable to be followed by fatal results.]

Again, pressure is applicable to certain cases of aneurism to which the ligature is not, as well as to some cases in which the operation by ligature would be likely to be followed by unfavourable results.

[Thus, when an aneurism has attained a large size, the pressure upon the neighbouring vessels causes œdema, and may produce obliteration of some of the arteries; in such gangrene may follow the application of a ligature; but this cannot happen in the treatment by compression, which acts gradually, and can be interrupted at any time.

Dr. B. thinks that a large aneurism would be more quickly cured by pressure than a small one.]

When an aneurism has attained a large size, if its contents are principally fluid, and its parietes are much thinned, inflammation and suppuration of the sac very commonly follow the application of the ligature, which may bring the patient's life into danger, and, at best, must render the recovery very tedious. This has never occurred yet after the use of compression, and such a result is evidently much less likely to follow it.

Again, aneurism not unfrequently occurs in individuals in whom the coats of the artery, between the tumour and the heart, are so much diseased, that the vessel, instead of taking on the adhesive inflammation after the application of the ligature, ulcerates; or the ligature cuts its way through; or aneurism may occur in subjects labouring under valvular, or other disease of the heart. In such cases the operation by ligature is contra-indicated, and would almost necessarily fail; whereas pressure may be applied with the same prospect of success as in subjects in whom the heart and arteries are perfectly healthy,

Pressure is applicable to cases of the aneurismal diathesis, and when more than one aneurism exists at the same time; cases in which the operation by ligature is likewise contra-indicated; as well as to cases of spontaneous aneurism occurring in individuals of intemperate habits, or of broken-down constitution, in which the surgeon, with great reluctance, would perform any operation.

In such cases, compression promises to be equally effectual as in any other. Again, cases occasionally occur, where the patient has so much horror of a surgical operation, as to refuse to submit to it, although made acquainted with the risk of delay. Such individuals will gladly embrace any means by which they may be relieved from the necessity of undergoing an operation, and will cheerfully submit to any other method of treatment which promises a chance of cure. Indeed, it may be said to have been this accidental circumstance which led to the recent re-introduction of compression in the treatment of aneurism.

Lastly, if pressure should fail to cure an aneurism (which, from the results hitherto observed, is very unlikely), its employment will not preclude the subsequent operation by ligature; but, by retarding the increase of the aneurism, and assisting in the establishment of the collateral circulation, it would tend rather to render the chances of the operation by ligature more favourable.

[The principal objections which have been urged against the mode of treatment by pressure are three, viz., 1st. That the arteries to which it is applicable are few in number. 2nd. That pulsation is, for a considerable portion of time, likely to return, in consequence of the artery not being obliterated at the point to which pressure is applied;—and 3rd. That it is more tedious and painful than the method by ligature.

In reply, to the first objection, Dr. Bellingham brings forward Lisfranc's table, from which it appears that out of 179 cases collected by that author, (exclusive of aortic aneurism) 59 were cases of popliteal, 17 of carotid, and 16 of subclavian aneurism, whilst the external iliac was only affected five times. But even this must be much below the average, for few cases, comparatively speaking, of operation for popliteal aneurism are published, owing to its frequency; whereas most of the operations upon the other arteries are brought before the Profession, on account of the infrequency of disease in those vessels. And it surely ought not to be urged against this method, that because aneurism occurs in arteries beyond its reach, we should not apply it to vessels to which it is adapted; or that the practice should be denounced, because it is not applicable to every vessel.

To the second objection, the probability of return of pulsation, the mode by pressure seems even less obnoxious than that by ligature, because the former mode appears to be very nearly that by which nature under the most favourable circumstances, effects a spontaneous cure.

Then as to the third objection, several of the cases prove that less time was occupied in the treatment by pressure than in average cases by operation, and it is very likely that where a longer time elapsed, it was dependent upon imperfection of the instrument, irritability in the patient, or two compressors not being used together. As to the assertion that more pain is caused than when the ligature is employed, this would be very true were it necessary to apply it with such force as to obliterate the vessel, as was formerly supposed, but we know that when compression is properly employed, the pain which the aneurismal swelling occasions is really relieved, instead of being aggravated.

The following conclusions embrace in a few words the chief things to be remembered on this subject:—]

1st. That the arteries to which pressure is applicable, being far more frequently the subject of spontaneous aneurism than those to which it is inapplicable, compression promises to supersede the ligature in the great majority of cases.

2nd. Pressure has several obvious advantages over the ligature, being applicable to a considerable number of cases in which the ligature is contra-indicated, or inadmissible.

3rd. The treatment of aneurism by compression does not involve the slightest risk; and even if it should fail, its employment not only does not preclude the subsequent operation by ligature, but renders the chances of the operation by ligature more favourable.

4th. Such an amount of pressure is never necessary as will cause inflammation and adhesion of the opposed surfaces of the vessel at the point compressed.

5th. Compression should not be carried even so far as completely to intercept the circulation in the artery at the point compressed; the consolidation of the aneurism will be more certainly and more quickly brought about, and with less inconvenience to the patient, by allowing a feeble current of blood to pass through the sac of the aneurism.

6th. Compression by means of two or more instruments, one of which is alternately relaxed, is much more effectual than by any single instrument.

7th. Compression, according to the rules laid down here, is neither very tedious nor very painful, and can be maintained, in a great measure, by the patient himself.

8th. An aneurism cured by compression of the artery above the tumour, according to this method, is much less likely to return than where the ligature had been employed.

Dublin Journal of Medical Science, May 1845, *p.* 163.

[Another case in which aneurism of the popliteal artery was cured by compression of the femoral artery, by Mr. Edward Greatrex, was communicated to the Royal Medical and Chirurgical Society.]

The patient, a private of the Coldstream Guards, 27 years of age, and previously healthy, on the 22nd May, 1844, complained of pain and swelling behind the right knee. On examination, a large, irregularly-shaped aneurism was found filling up the popliteal space, strongly pulsating, and admitting of being partially emptied by pressure. A delay took place in proceeding to apply compression, till the 18th of June, owing to the patient having been seized with acute laryngitis. An Italian tourniquet, with modifications in its construction, was then applied; but a relaxation in the treatment was soon required, from the patient being attacked with modified small-pox. On the 8th of July, the tumour having increased in size, the plan was adopted of screwing the pad firmly upon the femoral artery, and leaving the patient the key, so that when the pain became intolerable he might relax the pressure by the instrument, and compress the artery higher up by his fingers. On the following day, this method was found to have been successful, for the tumour was perfectly solid, and no pulsation or bellows-sound was afterwards perceived. The compression was continued for nine days longer. When the instrument was removed, the femoral artery was distinctly felt to pulsate down to its entrance into the tendinous canal, and two arteries, about as large as crow-quills, could be traced over the surface of the now hard and solid tumour. From this date, the swelling gradually diminished; the patient began to walk about on the 9th of August, and he was dismissed from the hospital, to undertake light duty, on the 14th of November. He returned to full duty on the 12th of December, which he has efficiently discharged to the present time.

[Mr. Bransby Cooper has known a case in which the femoral artery was tied for aneurism of the right popliteal, whilst a small tumour in the left popliteal space has been treated by compression. Fourteen months after his discharge, apparently cured, the patient returned with aneurism of the left side, which was obliged to be tied. Mr. C. feared the disease might return in this case of Mr. Greatrex, because of the subsistence of pulsation of the artery in connection with the aneurism.

Mr. Stanley stated that he had seen the limb, and the disease certainly appeared cured. The cases in which compression had been used did not, however, yet afford sufficient evidence that pressure alone was sufficient in these cases. In Mr. Greatrex's case the artery certainly remained pervious.

Mr. Cooper thought that it required twelve months, at least, to determine that the patient was safe from a return. In one of his own cases the disease had returned after that time.

Mr. Curling remarked, that by the mode in which Mr. Greatrex had treated his case the collateral circulation was not interfered with, and that therefore we might expect a better result than in Mr. Cooper's case, where pressure was differently applied. In the case of popliteal aneurism it was not necessary to obstruct the circulation through the femoral artery completely, as arrest of the circulation through the tumour to a certain extent, effected the formation of a coagulum in the aneurism. At present, we have no evidence of the state of the artery, by examination, after cure by pressure. He should expect, however, to find a firm coagulum in the sac, with freedom of circulation through the vessel.

Mr. Shaw related a case which appeared to bear somewhat on the subject of discussion, as it illustrated the possibility of a coagulum being formed in the sac, though the channel of the blood was not entirely obstructed.]

Lancet, Jan. 25th, 1845, *p.* 99.

[The following case of popliteal aneurism treated by compression of the femoral artery is by F. Newcombe, Esq. The patient, a gentleman, 26 years of age, had been thrown from his horse whilst hunting last season, and received a slight contusion in the lower part of the left thigh, where a large aneurism subsequently formed.]

On the 20th of September last he took a long walk, and shortly after perceived a tumour in the inside of the thigh, which has rapidly increased up to the present time. The tumour now occupies the entire of the upper part of the popliteal space, which it fills, so that the edges of the hamstring muscles cannot be felt; it is prolonged thence along the inner side of the thigh, as far as the internal condyle of the femur. The tumour may, in fact, be considered as consisting of two portions—that occupying the upper part of the ham, comparatively firm and resisting—and that extending along the inner side of the thigh, considerably the larger of the two, soft, yielding, and compressible, evidently containing fluid blood, and its parietes so thin, that great apprehensions are entertained lest they may give way. There is general œdema of the limb; its greatest circumference at the affected part exceeds that of the opposite one, 5½ inches. It is unnecessary to state in minute details the general characters of aneurism presented by the tumour; but it is necessary to mention that the pulsation is much stronger in the larger portion of the tumour than in that which occupies the ham, and though pressure on the femoral artery caused complete cessation of the pulsation, it produced no diminution in the size of the tumour. It is remarkable, however, that the pain, which was very severe in the tumour, and also in the course of the saphena nerve, ceased completely when pressure was made on the femoral artery in the groin. Seeing that the greater portion of the aneurismal sac was so very thin, and its contents perfectly fluid, it was thought prudent by Mr. Cusack to apply pressure on the femoral artery during the removal of the patient to Dublin; and for this purpose I was furnished with a press artere, with which Mr. Cusack had previously effected a cure in a case of popliteal aneurism, and which is described and figured in the Medical Press, vol. IX, p. 279. Pulse, 120. Previous to the commencement of our journey, this instrument was applied, the pressure being made on the artery as it crosses the pubes; the pulsation in the tumour was easily commanded. The pain in the limb was at the same time completely removed. The instrument was kept on until our arrival in Dublin, being, however, now and then slightly relaxed, when its presence caused uneasiness.

[On arriving in Dublin, whence he was brought from the country, the patient was seen by Sir P. Crampton, who agreed with Mr. Cusack, that pressure of the main artery above the tumour should be tried, a night's rest being allowed to recruit the patient.]

It having been determined to use two instruments similar to those described by Dr. Bellingham, in the Medical Press for August 28, 1844, and in the same manner as he had employed them in a case of the same kind, I proceeded to apply the pressure in the following manner, in the presence of Mr. Cusack and Sir P. Crampton:—One clamp was applied to the femoral artery at the lower part of Scarpa's space, sufficiently tight to greatly diminish, without completely arresting, the flow of blood through the vessel, and nearly to stop the pulsation in the tumour; the other clamp was applied higher up upon the limb, but not tightened. When the pressure from the first clamp became inconvenient, the second was tightened, and the other was relaxed. By thus alternating the action of the instruments, (which it was found necessary to do at intervals, varying from half an hour to an hour, and by shifting them, as occasion required, to various points, ranging from the pubes to the edge of the tumour,) permanent pressure was enabled to be maintained. It would have been easy to have stopped the current through the artery, but when pressure was carried to this extent, the patient complained of palpitation of the heart, which, however, ceased when the instrument was slightly relaxed. It may be well to observe, that the nature of the disease, and the principle of the treatment proposed, had been explained to the patient, who materially aided in the management of the case. No bandage was applied to the limb, or over the tumour.

Low diet was enjoined, and digitalis was administered, with an opiate at night.

No pulsation can be felt in popliteal or tibial arteries.

[Pulsation soon ceased in the tumour, and the sac began to thicken. The pulse, which on the second day was 120, fell next day to 80, at which it remained. Pressure, which at first could only be borne a few minutes in one place, gradually gave less and less pain; the tumour diminished slightly in size, its hardness meantime increasing; and on the 7th day the use of digitalis was discontinued. Fifteen days after the commencement of this treatment, the circumference of the affected limb was less than an inch more than that of the sound limb, and the anterior and posterior tibial arteries had apparently resumed their natural size; and in about three weeks after this, the patient was wearing merely an elastic bandage, and was permitted to remove from his bed to a sofa, and in a few days subsequently was allowed the use of crutches, the foot being supported by a sling.]

During the entire course of this treatment there was no perceptible difference in the temperature of the two feet.

Dublin Journal of Medical Science, March, 1845, *p.* 155.

78.—ON RHEUMATIC CARIES OF THE SPINE.

By Samuel Solly, Esq., F.R.S.

[This is a disease to which little attention had been paid until it was pointed out by Sir B. Brodie. As in strumous caries Mr. Solly thinks that the paralysis is caused by fibrous effusion into the canal, so in rheumatic caries he believes that absorption of the bones, as shown by the angular curvature, is preceded by inflammation of its substance, and we have evidence of spinal irritation so soon as this inflammation of the bone has extended to the membrane of the cord.

In treating this disease as inflammatory, it is necessary to be extremely careful in our antiphlogistic measures, on account of the general depression of the vital powers attendant upon inflammation of their structure. It will scarcely ever bear active treatment, and the bloodletting should be almost invariably merely local.]

I need hardly insist on the importance of a correct diagnosis and prognosis in these cases; and if it is important for you to distinguish between lateral curvature and angular curvature, so is it even still more important that you should distinguish between ordinary or *strumous* caries of the spine, and the *rheumatic* caries of Sir B. Brodie, for I am convinced that the two diseases are essentially different, both as regards their origin, progress, and termination, and the treatment required for their cure; and again, between the latter, and disease of the chord independent of disease of the bone. Sir B. Brodie, in a letter published in the Lancet, of the 30th of December, 1843, has remarked that rheumatic caries is always accompanied with pain; scrofulous caries, though frequently, not so invariably; and in paraplegia, from disease of the chord, independent of disease of the vertebræ, there is an entire absence of pain. The history of each case will also assist you—the presence or absence of a rheumatic or of a scrofulous diathesis—the moral history of your patient, independent of disease of the chord being generally the result of excess in venery, by persons leading sedentary lives, and engaged in continual mental exertion. But in these last cases—and I have seen several—there is no pain on tapping the spine. But, on the other hand, there are cases of spinal disease in which the diagnosis is not so easy. The patient suffers severe pain on pressure over the spinous processes, with total loss of power of the legs, but without any irregularity of the vertebræ, or other evidence of the existence of disease of the bones. The most anomalous symptoms, however, generally occur in females; and when we find in our examination of these cases that there is no evidence of a rheumatic tendency previously, that they have never suffered from rheumatic pains, and that the tenderness on pressure is not confined definitively to any particular portion of the spine, severe pressure not inflicting more than slight pain; again, the pain shifting, sometimes in one portion of the spine, sometimes in another; and if, in addition to this, you find clear signs of an hysterical diathesis, you may generally refer such ailments to an hysterical origin.

[As to the pathology of rheumatic caries, Mr. Solly's opinions are conjectural, never having had an opportunity of examining a case after death; but he says—]

I believe that this disease is local, mollities ossium *rubra et fragilis*. I know that this view will be objected to, on the ground that mollities ossium is a general, not a partial disease, and that it is always fatal. In the paper which the Medico-Chirurgical Society did me the honour to publish, on the pathology of mollities ossium, I related two cases which occurred in the practice of Mr. Hodgson, of Birmingham, in which this disease was confined to one bone, and I have little doubt, that when the characters of this disease are better understood, we shall find it more limited than is at present supposed. It has been long known to the accoucheur that the bones of the pelvis will be alone the subject of mollities ossium, and also that they will again recover their natural condition.

[Mr. Solly considers mollities ossium also an inflammatory disease; if correct, it resembles rheumatic caries in this respect: and quotes the opinion of a friend whose cases he has related in his own words, in support of this hypothesis, to the effect "that the condition of the bone is simply that of mollities ossium; that mollities ossium is aborigine, inflammatory."

In this case, "after the inflammatory stage had ceased, the natural deposit of lime into the bone was arrested, and then, but not till then, did the deformity of the spine take place, and when the abnormal excretion of this earth by the kidneys ceased, and its normal secretion by the vessels of the bone recommenced, then did his sufferings cease and his recovery begin." In another letter of this patient is the following ingenious suggestion:—]

If you consider phosphorus is required both for the brain matter and bone matter, you can get at something like a reason why nervous exhaustion should cause a diminished supply of phosphate of lime in the bones, for as the brain is more worthy than the bone, the constitution would give phosphorus for medulla first before bone.

Acting upon this suggestion, I should not hesitate to give phosphoric acid internally in this stage of the disease. It will do no harm even if it does not act specifically, for it is a good tonic, and often agrees with the digestive organs better than the sulphuric acid. You may begin with ten minims of the dilute acid in water for a dose.

I think that it must be evident to all pathologists who have examined the condition of the vertebral column after death in caries of these bones, that there are two different diseases; in the one there is a deposition of scrofulous tubercle, and the softening which exists appears to depend on this deposition; in the other the bones are red, and charged with soft grumous matter. It is true, that this form of disease is sometimes accompanied with suppuration, and so far this would appear to militate against my theory that angular curvature without suppuration is dependent on a different disease.

[Mr. S. concludes with some remarks on one point in the management of these cases:—]

In the treatment of all affections of the spinal chord, whether dependent on disease of the vertebræ or not, it is especially important to bear in mind the sympathy which exists between it and the brain. The mind must be kept at rest; the mental powers must not be exerted; the mental energy must be husbanded, or the spinal chord will suffer.

Medical Gazette, Feb. 28, 1845, *p.* 689.

79.—*On the Treatment of Gangrena Senilis.* By James Miller, Esq., F.R.S.E., Professor of Surgery in Edinburgh University, &c.

In the chronic gangrene of old people, the *Gangrena senilis*, we may have two distinct forms: death direct, from mere want of power; or death indirect, weakened power being overcome by inflammatory action. In the former case, cautious general support is expedient, enough to maintain and increase general power; yet cautious to avoid the induction of an inflammatory process, which we know the part to be unable to bear; and the part itself may be covered over with tepid water dressing, or any other bland protective application.

In the second, or inflammatory form—much the more frequent—our object should be to subdue the local or perverted action, yet without impairing, on the contrary rather adding to, the general power of system. The best local application with this view, is the nitrate of silver, pencilled over the red, painful, and swoln parts, so as merely to blacken, and obtain the simply sedative and antiphlogistic result; covering the part afterwards with a light soft poultice, or water-dressing. The patient should be kept in a recumbent posture, with the part somewhat elevated. The diet must be non-stimulant, otherwise action, already beyond the power of the part to bear, will be further increased; it must yet be not truly antiphlogistic, or starving, otherwise both general and local power, already, weak, will be still further impaired, and the existing action, even without increase, rendered more and more destructive. It will consist then, of simple farinaceous food; such as will maintain power, and yet not favour undue vascular action. At the same time the continued use of opiates is highly expedient. Great pain and general irritation attend the progress of the disorder. The former is in part alleviated by the nitrate of silver; both will be much assuaged by opium, which further, according to some, would seem to exert a beneficial tonic effect on the capillaries, thereby tending to increase vital power under circumstances when it is much required. Under such treatment, we expect, and often not in vain, pain, redness, and swelling to cease, as also the advance of mortification; a healthy line of demarcation is established; the dead parts are thrown off; the patient rallies greatly in his system; and in short recovery is obtained, though not of course without more or less mutilation.

But such was not the practice, and such were not the results of former times. The practitioner took but a one-sided view of the case; regarding deficient power alone, and overlooking redundant action. His patient was literally crammed with diet of the most rich and stimulant kind; if in the better ranks of life, his table was made to groan daily, as well as himself, under the most sumptuous viands; and yet the generous food seemed only to feed the disease, not the patient. The dusky redness spread more and more, and both part and frame sank under it. The error was at length perceived, and an opposite extreme was gone into. Seeing then nothing but overaction, antiphlogistics were had recourse to, as if the process were of the ordinary sthenic form; disregarding the want of power, which did not fail to increase under the neglect. Dupuytren, for example, trusted to venesection. Now, a middle place is wisely selected; we neither stimulate nor spoliate the system; local action is moderated, while both local and general power is enhanced and maintained; and the result is altogether satisfactory.

British and Foreign Medical Review, April 1845, *p.* 528.

80.—ON CONTRACTION OF THE KNEE-JOINT IN THE FLEXED POSITION.

By R. W. Tamplin, Esq.

[Of all the deformities to which the human frame is subject, those of the knee-joint are perhaps the most important, and of these none is more important than contraction of the knee-joint in the flexed position, commonly called anchylosis of the knee.]

This deformity or *malposition* (for that is its real character), consists either of a permanently flexed position solely, or flexed and everted combined, a semi-rotated condition of the tibia on the femur —that is, if the legs were brought into the extended position, the knees would be found to incline inwardly to a greater or less extent, and the foot and leg everted. There is also another change of the relative position of the bones frequently met with in combination, namely, a receding of the tibia upon the posterior surface of the condyles of the femur; this last involving the necessity of an alteration of structure, or of the natural relative length of the ligaments being lost, as will be hereafter seen. It is a congenital and non-congenital deformity; but so rarely is it met with congenital, as to form the exception. In the congenital deformity you have simply a contraction of the flexors of the knee, unaccompanied with any alteration in the healthy condition of the joint itself, but combined occasionally with one or other of the deformities of the feet mentioned.

[Mr. Tamplin regards this deformity, when unattended with malformation in any of the natural structures, as the result of position in utero. The causes of the non-congenital form may be divided into direct and remote; amongst the direct are injuries, inflammation of the synovial membrane, causing contraction of the flexors, and scrofulous inflammation of the joint. Of the remote causes, are, injuries to the spine, at first causing paralysis of the entire lower extremities; and cerebral or spinal irritation, sometimes producing complete loss of power, on recovery from which, contraction of the flexors remains. Mr. T. ingeniously accounts for the flexed position remaining after inflammation of the joint, by the fact that during the disease the limb is kept flexed as being the position which causes least suffering to the patient, on the subsidence of which the flexors are found contracted. He is of opinion that in these cases the synovial membrane is thickened, inelastic, and altered in its structure, and that the joint is bound by adhesions, for it is impossible to bend it to a greater extent than that which already exists, in which case great care is requisite in the diagnosis to distinguish it from anchylosis. Idiopathic inflammation of the synovial membrane, arising without any apparent cause, usually produces very severe results, as effusion into the synovial cavity, and a change in the membrane. In simple inflammation, however, the results are not so severe.]

But whether simple or not, the effects are the same, if the position of the limb is unattended to, namely, contraction of the flexors of the joint, which contraction becomes permanent, whether there is or is not any evident change in the secretory surface of the synovial membrane. In rheumatic inflammation, as I mentioned, a change of a serious character frequently results, producing adhesions, which, if allowed to remain passive, terminate in complete anchylosis. Several cases have presented themselves in which not the slightest motion could be detected by the exercise of great force, and that after a few years' duration. In fact, cases have occurred where three years only had elapsed and this condition of the joint existed, rendering any attempt at cure futile. Of course there are exceptions to this; and if motion is found to exist, and all evidence of diseased action gone, you will at all events use every effort to restore the position of the limb and the functions of the joint. This cause is therefore as serious, if not more so, than any we have considered or shall have to mention, and will require the greatest attention and perseverance in the treatment.

We come now to another cause mentioned, namely, scrofulous disease of the joint, or in the neighbourhood of the joint. This is, as you are all aware, a very common cause, and one which frequently results in the loss of the limb by amputation; and I would beg to draw your attention to what I consider to be the actual condition of the joint and the character of this disease. My remarks must apply to children and young subjects, as, of course, in the adult this disease does not present the same uniform character, nor have adult patients that innate restorative power which is so active during early life. Now I regard this affection as one of the ordinary processes attending a departure from the healthy state, whether it attacks the bones surrounding the joint, the synovial membrane, or the cartilages and ligaments themselves, and not as a disease of a malignant character, admitting of no known remedy, and which terminates ultimately in the loss of the part affected, and oftentimes in the loss of life. Now, what are the physiological conditions of the parts entering into the composition of a joint? It is composed of bone, ligaments, and a delicate semi-transparent membrane, called the synovial membrane. The bone is the foundation, if I may so speak; the cartilage is so arranged that it gives an elasticity and smoothness, and in this way facilitates motion, whilst the synovia secreted by its membrane lubricates the surfaces; and by these means the motions of the joints are rendered perfectly free and uninterrupted, the articulating surfaces gliding insensibly over each other. The bone and cartilage exist in a comparatively low state of vitality, and do not possess the power of resisting the effects of disease, at least only in a comparatively diminished degree, whilst the synovial membrane readily becomes the subject of disease, and, when it does so, the disease is generally of an acute character, which, in a short space of time, alters its secretions, and if the inflammation proceeds, the membrane itself becomes altered in character, and, instead of facilitating the movements of a joint, becomes in fact a direct obstacle, and, according to the amount of change in structure, limits or entirely prevents the natural motion taking place. From the fact of bone and cartilage possessing a *low state of vitality*, and being incapable of resisting to any extent, the effects of diseased action, after positive disease has existed and subsided, the restorative process is, as might be easily anticipated, exceedingly slow, under the most favourable circumstances, and if the cartilage has been destroyed, it does not effect a reproduction, but is supplied by a sort of ivory substance, polished and hardened, supposing the diseased action stops at the cartilage. The synovial membrane also, if a great change has taken place, does not reassume its thin, elastic, semi-transparent character, but remains more or less thickened, and its secretion is either altogether lost or altered in quantity and character, and although motion is admitted of, yet it is not that free unlimited motion which the joint possesses in its healthy condition. In the knee-joint you have also the crucial ligaments surrounded by the synovial membrane, and forming the most important connection of this articulation. If, then, inflammation takes place in the joint to any extent, of course the ligaments must suffer more or less, becoming softened and unable to fulfil the office for which they exist, namely, retaining in position the articulating surfaces of the condyles of the femur and head of the tibia. Now, by becoming softened or weakened, of course the muscles would tend to occasion a displacement of these bones to a greater or less extent, independently of the contracted or flexed position, as if the bones were not firmly held in apposition. The head of the tibia will be drawn out of its natural position by the constant action of the muscles. In the direction in which there is a preponderance of power, and this direction is both backwards and lateral, or both combined, occasionally also with more or less rotation of the tibia,—the lateral deviation being to the outside, from the great power exercised by the biceps, flexor femoris, as this muscle is not only very powerful, but passes more on the outside than the semi-membranosus and semi-tendinosus do in the inside in their course to their insertions; these two last mentioned lying more behind the joint until they wind round the head of the tibia. It is in this way only that I can explain the abduction of the leg, of which we shall presently speak. The restorative process is, as I have just stated, of necessity an exceedingly slow and tedious one, under the most favourable circumstances; whether the disease attacks the joint itself or the extremities of the bones surrounding it primarily, the joint secondarily. It requires the joint to be kept at rest, or nearly so, and a uniform support to the entire limb; the natural temperature maintained, and the general health supported, and this most uninterruptedly followed up. By these means I believe that most diseases of the joints, in young subjects, provided they are not malignant, which I do not believe they can be considered, may be cured, and even if the patients have suffered from destruction of the joints and of the bones, or that portion forming the articulating surfaces, although all motion may be out of the question, yet I distinctly maintain that an anchylosed knee, with the use of the foot, is far preferable to a wooden leg; and the most favourable position may be selected during the period the restorative process is going on. In the majority of cases of strumous disease, the joint itself is but slightly affected, although the surrounding parts are one mass of disease. The inflammation consequent on the irritation of that disease is of a very chronic character, and does not appear in those cases to risk the integrity of the joint, although there may be, and generally is, an increased secretion of synovia, but beyond this the joint does not appear to suffer; at least, in an immense number of cases. I have witnessed the most frightful amount of disease, appearing in a superficial view to exist in the joint itself, and yet the joint remaining perfectly sound, with the exception of the increased quantity of synovia.

Medical Gazette, Jan. 10, 1845, *p.* 466.

[In the *treatment* of these diseases it is of the greatest importance to ascertain the actual condition of the joint, and first of all whether the disease in the joint has subsided, as any active treatment would be imprudent so long as disease existed.]

After, then, you have satisfied yourselves of the cause, you will proceed to ascertain, 1st, if there is motion; 2dly, what is the amount of motion; 3dly, what is the *nature* of the motion, and the cause of resistance,—whether that resistance is owing to the muscles alone, or to the muscles and joint itself combined; also, what voluntary power, if any, the patient possesses at the time present. After these preliminary inquiries, let an assistant hold the thigh firmly, whilst you attempt to extend the leg forcibly. If you are able to extend it in the slightest degree, if the patient complains of pain on the anterior surface of the joint, however slight the motion obtained in this way may be, your prognosis will be favourable; and even in those cases where there is no perceptible motion, as in the cases I have described to you of injuries to the joint, in my last lecture, if the patient complains of pain in the situation mentioned, you may anticipate the possibility of removing the contraction. It is also as well to examine the patella, and to ascertain whether it admits of motion in a lateral direction, which you can do in the following manner:—Place the thumb or finger of the left hand on the edge of the patella, and with the thumb of the right hand forcibly press on the other side. If there is motion, you will of course feel the edge which is pressed upon depressed, and the opposite edge raised. This is very easily accomplished in some cases, but in others the patella will appear immoveable, and require the greatest caution and care before you can be satisfied whether motion exists, as the sensation conveyed by the skin alone, in moving when pressed upon, is likely to deceive you. Here also you will be guided in these difficult cases by the circumstance of the patient complaining of pain, not on the points pressed upon, but beneath the patella, in the joint. Should they do so, you may rely upon it that the patella is not ankylosed either to the femur or the tibia. The patella, in severe cases of contraction, becomes lodged between the condyles, and is firmly held by the rectus above and the ligament below, so that it is often not an easy matter to find or to satisfy yourselves of its position, much less to determine its immoveability. I have myself repeatedly been compelled to examine with the greatest care before I could discover it at all. Having satisfied yourselves there is motion, you will then look to its character. If it is a steady motion, and upon an increase of extension the flexor tendons are rendered more tense, you will regard the resistance as confined to the muscles principally; if, on the other hand, you find upon keeping up the extension for some seconds, that the joint returns to its contracted position with an elastic impulse, you may anticipate resistance, arising from adhesions in the joint itself, and of course you will be more guarded in your prognosis. If you find free motion between the contracted or flexed position, that is, if you are enabled to increase the amount of flexion without difficulty, with as much ease as can be done ordinarily, this will be a favourable circumstance. And of course you will, in forming an opinion, look at these indications collectively, having a due regard to the original cause.

If, on the contrary, the joint is immoveable, and occasions no pain upon examination; if in continuing your extension, the muscles relax themselves, and there is no motion or pain, you will regard these as unfavourable indications, and it is hopeless to attempt restoration by the ordinary methods. If you have free motion to a certain point, and the motion becomes suddenly checked, as if by a solid substance, giving you the sensation of its being stopped by a spicula of bone, this also must be regarded as unfavourable. I have seen three cases of this kind, where I believe the patella had become ankylosed to the femur, and from the tibia being drawn backwards somewhat behind the condyles of the femur, the moment the leg was extended to a certain point, it received a dead check stop, evidently caused by the patella being firmly fixed, and pressing on the anterior surface of the head of the tibia, whenever the latter was brought to the point at which the patella was immoveable; the joint being freely moveable up to that point in each case.

These are, then, the principal indications for or against the ordinary treatment being followed; I say ordinary, for you must be aware of the femur having been sawn through in cases of complete anchylosis, and immediately afterwards the leg being placed in the most favourable position, so that the bone should become united in the position adopted. This experiment is said to have been successful; but it is quite another affair, and a mode of practice I have not thought it advisable to follow.

Having, then, satisfied yourselves of the probability of being enabled to remove the deformity, you will decide as to the means to be adopted, whether mechanical alone, or surgical and mechanical combined. In all cases where the deformity has been of short duration, and where there is tolerably free motion, I would advise your selecting the mechanical alone, whether the contraction is to a greater or less extent. Bandaging the leg carefully, from the foot above the knee, and adjusting the leg in the position in which it is, in the ordinary knee-splint, with the male and female screw beneath the joint, and to which I have added a metal plate, to hold the thigh firmly in position, taking care that there is no undue pressure, by straightening the splint more rapidly than the leg can follow, and thus inducing pressure on points, these points being generally just above the heel posteriorly, and the anterior surface of the thigh, just above the condyles, as well as at the extremity of the splint behind the thigh. If, however, the deformity has existed for any length of time, whether it is severe or not, I would advise section of the tendons of the contracted muscles, as well as any dense bands of fascia you may meet with; for in old cases the fascia becomes contracted, and at a greater distance from the popliteal space; and oftentimes you will find, upon examination, the region of the popliteal space filled with one dense mass of contracted fascia, and what I imagine to be thickened and condensed cellular tissue: when it presents this appearance, I need not tell you it would be dangerous to divide the fascia beyond the superficial bands. The patient, then, will be laid horizontally on his face, and an assistant will grasp and extend the leg; you then feel for the tendons, and, as a rule, the biceps flexor femoris will be found more tense than the semi-membranosus and tendinosus. There are, however, exceptions to this rule. Should this be so, you will pass a sharp-pointed knife on the inner side of the tendon, and beneath it horizontally, or as nearly so as you can, and as soon as it extends to the breadth of the tendon, turn the sharp edge of the knife towards it, and divide it from within outwards, (that is, from the popliteal space.) After having divided the biceps, you will proceed to feel for the tendons of the semi-membranosus and tendinosus, and should they be prominent, pass the knife, on the inner side of the tendons, beneath them; depress the handle, and divide them from within outwards, as in the other instance. You will then examine carefully for any additional source of contraction, as the bands of fascia mentioned; and if you find them tense, and you can get at them with ease, divide them, but run no risk; for you must recollect that there is the vein, nerve, and artery, and the possibility of an irregular distribution, and the possibility also of a change in the relative position of the vessels, or of their being included in this mass I speak of; and although very frequently you will find it an easy matter to divide the tendons of the contracted muscles, and one or more of the clearly defined bands of fascia, yet in some cases you will experience the greatest difficulty (strange as it may appear) in satisfying yourself that you have even divided the tendons, however clearly defined they may have been, and however positive you may feel that you have passed the knife beneath them. This arises from the contraction of tissue which will be felt remaining, and in the position of the tendons; and you may insert your knife again and again, and still feel the chord or chords left, giving you the sensation that the tendon, or a portion of it, still remains. The same remarks apply to the fascia. I would advise you, therefore, to be cautious, and in such cases to rest satisfied with the division of the principal portions, for if you have succeeded in dividing the tendons, you will generally be enabled to bring the leg straight. This applies to simple contraction, without any alteration in the relative position of the bones. If you have also the inward inclination I have spoken of, which can be told by the prominence of the internal condyle of the femur; and if the tibia is rotated slightly on the femur, which I also mentioned to you, you will generally find it necessary to divide the vastus externus and fascia lata, in the manner described in a former lecture. After having completed the operation, pledgets of lint should be placed over the parts of puncture, sufficiently large to prevent any venous bleeding; for you will recollect that the popliteal space is filled with loose cellular tissue, and easily admits of effusion of blood (provided a moderate degree of pressure is not carefully maintained.) Retain the lint with long strips of adhesive plaster and bandage, and support the leg with a tin splint, bent at the angle at which the leg is contracted. Allow the lint to remain for a week, provided there is no pain, at the end of which time you will find the punctures healed, and all risk of their reopening effectually prevented. By too early extension, remember, you may irritate the parts of puncture, and be delayed in treatment. We have had one or two cases where a little venous hæmorrhage took place internally; and from proceeding too soon with the extension, inflammation set up around the points of puncture, and the clot, although small, ulcerated out, occupying about six weeks in healing, during which time nothing could be done; and a patient is now upstairs in whom I divided the biceps flexor femoris and vastus externus, for knock-knee, which some of you witnessed, where also this occurrence followed, although in a less degree, but occasioned, in like manner, from too early extension; therefore nothing is to be gained by commencing extension too quickly. I think, however, a week sufficient. In my own practice I always wait that time, and do not consider it prudent to commence sooner, from the quantity of loose cellular tissue occupying the popliteal space. You then apply the means of extension; and in a simple contraction, the ordinary splint, with the plate mentioned to hold the thigh down, you will find the most easy method, both for the patient and yourselves, taking care not to proceed more rapidly with the extension of the splint than of the knee, and being guided in your progress by the feelings of the patient. The extension of any joint that has been long in one position is always attended with pain; and in the knee they will invariably point to the anterior surface of the joint; so that you must proceed according to the feelings of the patient and the resistance met with, which will of course depend on the original cause of the deformity, and the consequent condition of the joint.

Medical Gazette, Jan. 31, 1845, *p.* 561.

81.—FISTULA IN ANO TREATED BY LIGATURE.

By — Luke, Esq.

The following cases are illustrations of the treatment of fistula in ano by ligature kept moderately tight, by means of a small screw tourniquet, thus gradually dividing by ulceration those parts usually divided by the knife.

The advantages of this method of treatment over the treatment by the knife are,—1st, The shorter period which usually elapses before the final cure; 2nd, The less pain which is usually experienced during the treatment; 3rd, The absence of all cause for dread of the knife, and the consequent inducement which it offers to the timid to an effective curative treatment; and lastly, the avoidance of all danger from bleeding—an advantage of great importance in the deeper forms of fistulæ which communicate with the rectum at a considerable distance from the anus. The treatment is conducted in the following manner:—An eyed probe, armed with dentist's silk, is introduced in the ordinary way through the fistula into the rectum, from whence the silk, together with the detached extremity of the probe, is withdrawn through the anus by means of a spring catch introduced into the rectum upon the forefinger of the operator. The parts to be divided are thus enclosed between the two extremities of the ligature, to which a small fistula-tourniquet is subsequently attached by passing them through holes provided for the purpose, and knotting them so as to prevent their being withdrawn. A screw is then applied, by the turning of which the requisite amount of tension is kept up. When the fistula does not communicate with the rectum, a perforation is made in its walls by the eyed probe, the extremity of which is made sharper than that ordinarily used. In other respects, the passing of the ligature, and the attachment of the tourniquet, is conducted in the same manner as when there is both an external and internal opening. It should be observed, that the passage of the ligature is accomplished with great facility, and with little if any more pain than attends the ordinary examination of a fistula with a common probe. Care is also taken that the tension of the ligature is never so great as to cause more than slight uneasiness at the part, and at its first application is usually left loose, to allow for swelling of the enclosed part arising from the slight inflammation which is caused by its presence. After the lapse of three or four days, ulceration of the enclosed part commences, and the tourniquet becomes loosened, indicating the necessity of the ligature being made tighter. This is done every three or four days, by making two or three turns of the screw with a watch-key fixed on a handle. While the process of ulceration is proceeding, a process of granulation is filling up the cavity behind the ligature, and on this account it is not desirable that the ulcerative process should proceed very rapidly, lest the latter should not proceed, *pari passu*, and a cavity be left unclosed. When a case has proceeded favourably, it usually happens that it may be reported as cured within one or two, or at most a few days after the complete division of the enclosed parts and consequent falling off of the tourniquet. During the treatment, it is desirable that causes tending to produce inflammation should be avoided, but in many cases the confinement of the patient is unnecessary, and moderate exercise may be used. Should inflammation, however, supervene, much pain is experienced by the greater tension given thereby to the ligature, the obvious remedy for which is the loosening the ligature by reversing the screw of the tourniquet.

[Mr. Luke then relates nine cases in which this method was tried. In the first the ligature was applied on the 6th of March, and came away on the 17th,—11 days. In the second the ligature was applied March 25th, and came away April 9th,—15 days. It was applied in the third case May 2nd, and came away on the 11th,—9 days. The average time that elapsed between its application and its coming away was about a fortnight, and a few days more were generally required before the parts were perfectly healed.]

Lancet, Feb. 22nd, 1845, *p.* 221.

[Mr. Lomas, of Manchester, gives us his method of using the ligature in fistula in ano, as follows:—]

I employ a fine metallic wire of silver or platinum. Having passed a probe director (one of Sir Benjamin Brodie's) along the fistula and through its internal orifice, its point, being very flexible. is readily directed downwards and out at the anus, by the finger previously introduced within the rectum; the structures to be divided are now upon the instrument, and, as it were, everted. The wire is then passed along the groove of the director, and the ends are crushed together until a very moderate compression is exerted upon the enclosed parts. It promotes the personal comfort of the patient to leave the twisted ends rather long, and to fix them on the sacrum with a cross slip of adhesive plaster. This trifling arrangement allows the buttocks to lie perfectly apposed, and he (the patient) is free from the disagreeable sensation of an interposed body or rough point, and visits the closet more comfortably. All that remains to be done is to twist up the ligature as it becomes slack, and in a week, or a little more, it is free. I do not confine the patient altogether: it is, however, advisable to keep him on the sofa for the first twenty-four hours, as erysipelas might arise in a bad subject, and also to limit his movements considerably during the entire treatment.

[He remarks, that he has found no strong reason to prefer it to the knife, and thinks that the plan of presenting the parts for division upon Sir B. Brodie's probe director, and dividing them with a sharp bistoury, is an operation so short, simple, and effectual, as to leave nothing to be desired.

The opinion of Mr. Luke, of the London Hospital, is, that the ligature consumes decidedly less time in establishing a cure than the knife.]

Medical Gazette, March 14, 1845, *p.* 766.

[Mr. Henry Burton, surgeon, Stoke Newington Road, from personal experience, gives a decided opinion against the ligature. Its application gave much pain in his own person, and caused great irritation; in a fortnight a second ligature was applied, which gave him dreadful torture, so that five days after he was obliged to have it cut out, the local and constitutional irritation became so great. Besides this, the irritation produced fresh suppuration, and two additional sinuses, for which he was operated on in the usual manner, and he declares that the whole of the pain was not a tithe of what he suffered under the ligature martyrdom.

A medical friend of Mr. Burton's underwent precisely the same ligature treatment, but found it so intolerable that he soon gave it up, thus escaping the aggravation of the disease entailed upon Mr. B. for his perseverance.]

Lancet, April 12*th*, 1845, *p*. 427.

[Mr. Luke, in reply to Mr. Burton, considers that the ligature was not properly applied in Mr. B's. case, and from nothing being said regarding the amount of tension subsequently used, we cannot judge whether the practice was such as Mr. Luke recommends.]

Now, in order that the ligature should be properly managed, it is necessary that it should not at any time be drawn so tense as to cause pain, and generally for the first few days should be left without any tension whatever upon it.

[As Mr. Burton speaks of the insertion of a second ligature, Mr. L. thinks it probable that the operator possessed no means of gradually increasing the pressure, and, therefore, that the first ligature was drawn at least moderately tight, which of itself would cause considerable pain, even without the increased tension given to it by the swelling of parts subsequently to its insertion.

Mr. L. also expresses it as his opinion,]

That the slow operation of the ligature may with advantage be made extensively available in practice, beyond its application to fistula in ano merely, as in the obliteration of veins when varicosed, either in the leg or in the spermatic cord; in the removal of tumours, when they are so vascular or so situated as to render the use of the knife dangerous; or in certain cases where the dread of the knife cannot be surmounted; and lastly, in laying open extensive sinuses, where, from their magnitude, the use of the knife would be attended with danger, or where, from the intervention of vessels, there might arise a risk of dangerous hæmorrhage.

In all the above cases, (in varicose veins of the leg excepted) I have availed myself of the slow operation of the ligature, and I think with much advantage to the patients who have experienced its use.

Lancet, April 26th, 1845, *p.* 482.

[The following is a description of a new instrument for applying ligature in fistula in ano, by Dr. Nelkin.]

This instrument is composed: 1° of a rod, about 11½ inches in length, the upper third of which is divided into four equal parts, united to each other by hinges, so arranged, that they can be closed only in one direction, the last being furnished with a knot, and a hole to pass the ligature; and 2° of a tube through which the former is passed when threaded. The finger being placed in the rectum, the apparatus thus prepared is passed upwards into the fistula, until the extremity reaches the finger, the tube is then withdrawn to an extent equal to one of the four divisions of the rod; the whole is next pushed forwards, the finger in the rectum causing the rod to bend downwards as it penetrates into the intestine; the same manœuvre is repeated until the ligature appears at the anus, when the surgeon seizes it, and terminates the operation.

Medical Times, Feb. 8th, 1845, *p.* 403.

82.—*On the Cure of Hydrocele, Encysted Tumours, and Fistula in Ano, without Operation.* By Dr. Alfred A. Harvey, Bristol. [Dr. Harvey has for thirty years successfully employed the following treatment in hydrocele, obtaining a radical cure without injection: his mode is as follows:—]

First, discharge the fluid with a trocar, or pocket lancet, and then apply a warm vinegar poultice all over the scrotum, in order to bring on inflammation, which generally takes place in a few hours, and becomes painful. When sufficient inflammation has been excited, remove the vinegar poultice, and apply a bread-and-milk poultice. In a short time, the pain and inflammation generally subside, and the cure is completed. Give a few smart doses of purgative medicine. Dr. Harvey adds the subjoined:—

"*Cure for Encysted Tumours*, or Wens of the Head, or other parts of the body, without cutting them out."—First, make a longitudinal cut along the scalp. This is performed with little loss of blood. Next press out the contents of the cyst, and apply, freely, alcohol in the cavity, with a camel's hair brush. Then place in the cavity, also, from two to six grains of nitrate of silver, and bring the edges together with strappings, when inflammation takes place. Should it inflame too much, apply cold-water dressings, and give a few doses of active purgative medicine. This plan has ever been found to complete the cure in a few days.

Fistula in Ano (blind external) can often be cured without cutting, by injecting alcohol the whole length of the sinus, three or four times a-day, until it brings on inflammation; when that takes place, the cure is generally completed in a short time. In full habits, bleeding by the arm should be practised, if required, and the bowels opened pretty freely, before the alcohol is injected. Should the inflammation become too severe, it should be regulated by poultice or cold-water dressings, and low diet should strictly be attended to.

Lancet, January 11, 1845, *p.* 33.

83.—ON DISLOCATION OF THE LONG HEAD OF THE BICEPS.

By Henry Hancock, Esq., Surgeon to Charing-Cross Hospital.

[There are probably few accidents so little noticed or understood as displacement of the tendons. The subject is scarcely mentioned in any of the numerous works on dislocations. although the consequence, when unreduced, is great inconvenience to the patient, and in the case of displacement of the tendon of the long head of the biceps, which happens more frequently than any other kind, the patient is deprived to a great degree of the use of the limb.

Mr, John Soden, of Bath, in 1841, published a paper on the subject in the "Transactions of the Royal Medico-Chirurgical Society of London, giving details of two cases which he had the opportunity of dissecting, and this is the only detailed and satisfactory account we have of these cases. It is but rarely that the opportunity occurs of examining these injuries by dissection, but Mr. Soden availed himself of his opportunities, and the profession is indebted to him for a very good paper, which has dispersed the doubt and obscurity investing them.

Magnetus, who died at Geneva in 1742, relates a case, and in the second edition of William Cowper's "Anatomy of Human Bodies," is a case which there is reason to think is a pirated version of that of Magnetus. Boerhaave observed that muscles often slip out of their places when their sheaths are so relaxed during violent efforts, as to offer little resistance, but he gives no cases. Lieutand in 1742 refers to displacement and injury of the tendons of the lumbar muscles; and Claude Ponteau in 1760 published a case which he describes as a displacement of one of the attachments of the splenius colli. Mr. Bromfield and Mr. Stanley each met with one case, and Mr. Gregory Smith met with two cases in his dissecting-room, both in the same person. This very vague and unsatisfactory account is all we had on the subject until the appearance of Mr. Soden's paper; indeed till then we knew very little of the matter.]

The principal signs of this accident are pain and tenderness in front of the joint, corresponding to the bicipital groove; acute pain in the course of the biceps when it is thrown into action, the pain being referred more particularly to its two extremities; the patient is unable to raise his hand to his head, or his arm beyond an acute angle from his body; the appearance of the shoulder is somewhat altered, the head of the humerus being drawn upwards, and more forwards than natural, lying close beneath the acromion process, whilst the posterior and external part of the joint is somewhat flattened.

When we consider how much in appearance these accidents resemble partial dislocations of the head of the humerus upwards and forwards, we can entertain but little doubt that they have frequently been mistaken for them.

In the treatment of these cases you have three principal objects in view:—to overcome the action of the capsular muscles, to reduce the tendon, and to keep the tendon in its groove when you have reduced it. Through the kindness of Mr. Bainbridge, jun., I have been enabled to make some investigations on the dead subject, which may perhaps be of some service, as guiding us in the treatment of these cases. Assisted by this gentleman, I cut down upon and dislocated the long tendon of the biceps on to the lesser or inner tubercle. I first endeavoured to return it by flexing the forearm and relaxing the muscle, whilst I rotated the humerus strongly inwards, but without success. I next straightened the arm, and holding it by the wrist, I rotated it inwards as far as I could, and then with a sweep carried it across the chest, whilst, with my left hand on the deltoid muscle, I pressed the head of the bone downwards and outwards, and the tendon returned to its groove with a very evident snap. I next displaced the tendon on to the outer or greater tubercle, when, by rotating the arm outwards with my right hand, and drawing the head of the bone downwards and outwards with my left, I reduced it, but I found it was more easily restored to its proper position by taking hold of the wrist with my right hand, and placing my left in the axilla; with the latter I pressed the head of the bone gently onwards, whilst with the former I supinated the hand and rotated the arm strongly outwards, at the same time bringing it to the side of the body, my left hand serving as a fulcrum in the axilla. By this means the deltoid was put upon the stretch, and its anterior fibres, upon the insertion of which the biceps tendon lay, evidently assisted the latter into its groove. I next endeavoured to ascertain in what position of the arm the tendon would remain most securely in its proper place. Accordingly, I flexed the forearm, and placed the hand in the position of pronation across the chest, when the tendon became again displaced, as it did immediately the head of the humerus was rotated inwards, although the forearm was extended; but when I extended the forearm, placed the hand supine, and separated the arm from the side, it remained properly in its place, being now bound down by the tendon of the pectoralis major. I am fully aware, in these experiments, that the subject being dead I did not encounter that opposition from the capsular muscles which I should in all probability have met with in a living patient; but, making every allowance for this, I am still in hopes that what I have here endeavoured to explain to you, may serve to place the treatment of these accidents on some surer basis than mere conjecture, and that henceforth you may have some rule to guide you.

We have seen that the head of the humerus is drawn up against the acromion process, and that the greater tubercle striking against that process, when the arm is separated from the side, prevents its being raised beyond a very acute angle. I should advise you to adopt the following method, should you find the plan, as recommended by Mr. Bromfield, fail. I am not aware of any particular symptom by which we can be guided with any certainty as to when the tendon is dislocated inwards, or when outwards; but, as a result of my experiments, I should imagine that it is more frequently dislocated inwards than outwards, the inclination of the head of the humerus, and the greater projection of the large tubercle, being unfavourable to the latter displacement. Place your patient on a low chair, and let an assistant fix his scapula by pressing upon the superior angle and costa; then separate the patient's arm from his side, as far as you can; keep his hand in the prone position, and make extension downwards and outwards from the wrist, until you have somewhat withdrawn the head of the bone from the acromion process. Now let an assistant sit down on the floor, underneath the injured arm, and, clasping both his hands over the deltoid muscle, draw the head and neck of the bone downwards and a little backwards, whilst you rotate the head of the bone inwards and backwards in the glenoid cavity, by making the patient's arm describe a circle, carrying it backwards, upwards, forwards, and inwards, across the chest. Should you have reason to suppose that the tendon is displaced outwards, separate the arm as far as you can from the body, and let an assistant make extension in that direction best calculated to remove the head of the humerus from the acromial process, that is, downwards and outwards. Unless this be done, in either form of the dislocation the bicipital tendon remains pressed up by the head of the humerus against the acromial process, and is obviously prevented from returning into its natural position. Next place your left hand well up in the axilla, and direct your assistant, whilst he keeps up the extension, to rotate the arm strongly outwards, and at the same time to bring it to the patient's side. Having reduced it, gently separate the arm from the patient's side; keep it steadily rotated outwards, and the hand supine; place a long splint, which extends from the shoulder to the fingers, along the back of the arm and hand, and also a pad or compress in front, over the bicipital groove. Fix the whole with a roller evenly and carefully applied, and place your patient on his back in bed, where he had better remain until you consider that the parts have become sufficiently firm to prevent a recurrence of the accident.

The reason why I recommend you to separate the arm from the side after reduction, is, that by so doing you place the pectoralis major muscle upon the stretch, and consequently make its broad tendinous insertion press more closely and directly over the bicipital groove.

In my experiments, the difficulty was not so great in reducing, as in keeping the tendon in its place when reduced, and certainly the plan which I am now advocating appeared both to Mr. Bainbridge and myself to be the most efficacious.

Provincial Medical and Surgical Journal, Nov. 13, 1844, *p.* 507.

84.—*On Rupture of the Tendon of the long head of the Biceps.* By Henry Hancock, Esq., Surgeon to Charing Cross Hospital. This accident may be occasioned by falling upon the arm, by violent twists of the limb, without external violence referred to the part, or by the sudden and violent extension of the limb, as when we put out our arms to save ourselves in falling. The patient experiences at the moment, a sensation of snapping in the shoulder, soon succeeded by inability to raise the hand to the head; acute pain is caused by even slight pressure in the course of the bicipital groove, or lower down, on the muscle itself; the latter becomes flabby, and the movement of the arm backwards and forwards produces acute suffering, mostly referred to the situation of the biceps, where it passes over the head of the humerus.

Treatment.—Your object in these cases should be to approximate the two portions of the tendon, to obtain union if possible, or otherwise to favour the attachment of the lower portion to the head of the humerus, as Mr. Stanley has pointed out. To do this effectually, place the hand in the semi-supine position, that is with the thumb upwards, making your patient grasp the opposite shoulder; thus you effectually relax the biceps muscle, as you will at once perceive, upon recollecting that the biceps is inserted into the back of the tubercle of the radius, and that the first action of the muscle, when the hand is prone, is to render it supine before it can effect flexion of the elbow. Now apply a roller carefully, beginning from below, carrying it up to the axilla, and fixing a compress over the course of the biceps tendon, by which means you will keep the muscle quiet and prevent spasms; and, lastly, secure the arm in this position by bandages.

[Mr. Earle's and Mr. Chapman's apparatus for injuries about the shoulder, though well adapted for the purpose intended, are very complicated and consequently expensive. Mr. Hancock has invented a modification of Mr. Earle's, which combines simplicity with cheapness, and can be made in less than half an hour.]

It consists of a long sleeve, made either of old sheeting or bed-ticking, which should be long enough to extend from the middle of the humerus to about three inches beyond the patient's fingers, and having, consequently, what (for the purposes of description) I shall call a humeral and a digital extremity, and also a hole corresponding to the olecranon to allow that process to project through. The digital extremity terminates in a *cul de sac*, or, in other words, is sewn up, and to it is attached a bandage three inches wide, made either of the same material as the sleeve, or of strong webbing, which is firmer and consequently better. This bandage should be at least three yards long, but you must be guided as to its length by the corpulence and size of your patient. To the posterior and external margin of the humeral extremity of the sleeve is attached another strap, from three quarters to a yard long, of the same width, and made of the same material. A pad for the axilla, made with bran, with a tape to pass round the patient's neck, completes the apparatus.

I will now show you the manner in which it is to be applied: we will suppose that you have a fracture of the acromion process or of the neck of the scapula; in the former, as I have already told you, you should not place a pad in the axilla. In the latter, you must not only use the pad for the axilla, but also one between the elbow and the side, or one which, extending from the axilla to the elbow, will answer the purpose of both.

I first put the sleeve on the injured arm, with the elbow projecting through the opening made for that purpose, and then, bending the forearm, place it horizontally across his chest. I carry the bandage from the digital end of the sleeve under the opposite arm, obliquely across the back, from below upwards over the front of the injured shoulder, without pressing upon the acromion process, under the opposite arm round the back under the elbow of the injured side, and pin the end to the band crossing the breast. I now carry the strap from the humeral end of the sleeve upwards across the back towards the opposite shoulder, and pin it up to the oblique band, by which the head of the bone is drawn upwards and backwards and completely supported against the acromion process.

Should the case be one of rupture of the bicipital tendon or fracture of the coracoid process, you employ the axillary pad, and apply the apparatus as follows:—Having put the patient's arm in the sleeve, you rest his hand on the shoulder of the opposite side, and carry the long bandage obliquely across the back, over the elbow of the injured side, and round the waist as often as it will go; pin it there, and support the elbow by carrying the short strap over to the sound shoulder and fasten it to the bandage encircling the waist.

You will observe that this apparatus is free from the objection urged by Mr. Chapman against that invented by Mr. Earle, as it leaves the motions of the sound shoulder entirely free and unimpeded, and the seat of injury uncovered, enabling you to watch the state of parts, without the necessity of disturbing the apparatus.

Provincial Medical and Surgical Journal, Nov. 27, 1844, p. 539.

85.—*On Reduction of Dislocation of the Scapula.* By JONATHAN TOOGOOD, Esq., M.D., Bridgewater. [Dr. Toogood has published the following plan of fixing the scapula:—" Having seated the patient on a low chair or stool, firmly secured the body, and fixed the pulley, he stands over him, and places the heel of his right hand on the acromion process, bearing his whole weight on his hand." By this method the scapula is rendered fixed and immoveable, extension is made, and reduction quickly follows.

A patient, a tall and remarkably muscular man, about forty, had his right shoulder dislocated, and the united strength of one physician, four surgeons, and sixteen assistants were required to reduce it; he again met with the same accident, but on the left side, when Dr. Toogood reduced it in two minutes by his method of fixing the scapula.]

Provincial Medical and Surgical Journal, Feb 26, 1845, p. 134

86.—*On Relaxed Rectum.* By HENRY HUNT, Esq., M. D. Dr. H. describes this as a malady of not unfrequent occurrence, and productive of much inconvenience and distress. The most prominent symptoms are, obstinate constipation, a frequent desire to evacuate the bowels, a constant sensation of load in the rectum—which is not relieved by an evacuation—and the discharge, after much forcing, of mucus streaked with blood. The bladder, urethra, and other adjacent organs, often participate in the irritation. On examination, the rectum will be found preternaturally enlarged, and more or less filled with large folds of mucous membrane pressing down on the anus, which impede the evacuation of the fæces, introduction of instruments, and injection of enemata. This morbid condition of mucous membrane, the author attributes to a neglected state of the bowels, and repeated great distention of the rectum by fæces, which causes the mucous membrane, when the bowel is empty, to hang in loose folds. This disease, if neglected or mismanaged, gives rise to prolapsus ani, an irritable and painful state of the sphincter, and an intro-susception of the upper and *un*dilated portion of the intestine, into the lower and dilated part. The treatment recommended for the *simple* relaxed rectum is, the avoidance of all aperient medicines, and the injection of a pint of cold water into the bowel every night previous to going to bed, the removal of the prolapsus, and the application of belladonna ointment to the irritable sphincter. In the case of intro-susception of the rectum, in addition to the use of the cold water injection, the exhibition of some mild aperient, taking care that whilst a costive and hardened state of the fæces is prevented, purging is avoided, and a course of the hyd. cum creta, with hyoscyamus or conium, or the iodide of potash and sarsaparilla.

[Dr. James Johnson disagrees with Dr. Hunt with respect to the use of mild aperients. He considers them to be essential to the successful treatment of the affection. He says—]

In cases of constipation, it is essential to effect a cure that the colon as well as the rectum should be acted upon. Fæces often collect above the rectum, and can not be reached by small injections of cold water. These injections are, moreover, not so harmless as people seem to imagine; at all events, he has seen them productive of violent tormina and great pain; in some instances, producing faintness. He would, in this class of cases, administer some mild aperient, which would act on the colon, and soften the fæces in that tube—such, for instance, as the tartrate of potash or the confection of senna. These medicines produce no irritation or unavailing efforts to evacuate the rectum; on the contrary, they soften the fæces above, and sooth rather than irritate. In the second class of cases mentioned, in which there was intro-susception of the rectum, he has found Ward's paste corrugate the folds, and give tone to the part. In this class of cases, when the bowels have protruded, and have not been carefully returned, it was liable to become inflamed, and be productive of great suffering. When persons so afflicted walked about or sat down, this was liable to occur. The most efficacious mechanical contrivance with which he was acquainted for the support of the rectum *in situ*, was the application of two silk handkerchiefs, one of which was to be passed round the waist, and one end of another tied behind, and the other end in front—a piece of soft sponge, covered with linen, being placed in the middle, so as to exert gentle pressure on the extremity of the bowel. This was simple, and easy of application. All instruments for the purpose he had found inefficient.

Mr. Bransby Cooper agreed with Dr. Johnson in reference to the expediency of applying remedies that would act on the colon in the first class of cases described by Dr. Hunt. He considered, however, that the application of handkerchiefs in cases of prolapsus recti, as recommended by Dr. Johnson, was far inferior as a remedial agent to the plan mentioned in the paper—namely, that of evacuating the bowels at night, just before retiring to bed. In diseases of the rectum, this rule was one of the greatest importance. If the bowels were evacuated in the morning, the patient either moved about, or remained in the sitting posture, by which irritation was kept up, and there was no opportunity of keeping the rectum *in situ*. When evacuated just before bed-time, the patient remained in the recumbent position for many hours, and the affected bowel was, during the whole of that time, in the pelvis. By this simple plan a cure was effected without the use of instruments or of medicine, both of which combined would only alleviate and not cure.

[For the support of the rectum in these cases, we have found an instrument made by Mr. Eagland of Leeds, of the greatest service and efficacy. It consists of a circular spring to go round the loins something like the common truss. To the posterior part of this is fixed another spring, which is brought down as far as the anus and terminated by an ivory ball, and fixed in front like a suspensory bandage by two side straps. This ivory ball, which is oval in shape, keeps up the gut very effectually, in the same way as a prolapsed uterus or a hernia is kept up.]

Lancet, Dec. 7, 1844, *p*. 326.

In cases of constipation from relaxation, aloes in combination with sulphate of quinine was a favourite prescription of Dr. Abercrombie, and often succeeds remarkably well, especially in persons advanced in life.

In cases of great dilatation, might not injections of nitrate of silver be of service, administered as recommended by Trousseau in the diarrhœa of children? (See Northern Journal of Medicine, vol. i. p. 347.) It has a great effect in producing contraction of the calibre of the vagina.

In the habitual constipation which so often produces this affection, Dr. Graves, after objecting strongly to the use of mercurial purgatives, recommends the following combination:—

℞ Electuarii sennæ ℥ii.; pulv. supertart. potass. ℥ss.; carb. ferri ʒii.; syrupi zingib. q. s.—Ft. electuarium.

The dose must be regulated by its effects, but in general a small tea-spoonful in the middle of the day and at bed-time will be sufficient.

Dr. Graves says, that the value of carbonate of iron as a tonic aperient has not been appreciated.

Northern Journal of Medicine, Jan. 1845, *p*. 185,

87.—*New Method of Introducing the Catheter*. M. Maisonneuve read a memoir upon a new method of introducing the catheter, even in the most difficult cases. He preceded his description by pointing out the difficulties and dangers in many cases of introducing the catheter, and he described the various methods of its introduction, which, as they are known to the profession, we need not here enumerate. He described his method as follows:—He first introduces into the urethra a very fine gum-elastic bougie, of size No. 1 or 2, and he then slides down upon this bougie a sound, open at both extremities, and proportioned to the calibre of the canal; the introduction of the sound is facilitated by means of a thread of silk or metal, which is fixed to the external extremity of the bougie. Having previously passed it into the canal of the sound, it suffices to push gently the sound upon the conducting bougie, first stretching the thread so that it may glide easily, and without causing pain, into the bladder. M. Maisonneuve says, that in all cases where he has tried this method, he has succeeded, though many of them were serious, and all attempts to introduce the catheter by the ordinary methods had failed; and from his experience he draws the following conclusions:—

1. The introduction of the catheter by means of the conducting bougie is the most easy and the most certain method known.
2. It succeeds perfectly where the ordinary methods are applicable.
3. It succeeds also where the ordinary methods fail.
4. It guards securely against painful explorations, (tatonnemens douloureux,) lacerations of the canal, false passages, &c.
5. It requires no particular dexterity, and can be used by the most unskilful.
6. It renders useless the "arsenal" of instruments recommended to overcome different obstacles, and requires the employment of the ordinary instruments only.

Lancet, March 1st, 1845, *p.* 232.

[This method of passing the catheter Mr. Barrington states to have been known and practised in the Dublin Hospitals so far back as five years ago, when Dr. Hutton, of the Richmond Hospital, employed it. The mode there adopted is perhaps preferable to that of M. Maisonneuve.]

A fine catgut bougie, eighteen or twenty inches long, was first passed within the stricture; a gum elastic catheter, open at both ends, was then passed upon the catgut down to, and, by proper management, unerringly through, the stricture.

The difference, then, consists in employing catgut of such a length that enough may remain external to the urethra to be passed through the canal of the catheter with facility, rendering the use of string of any kind unnecessary.

Lancet, March 15th, 1845, *p.* 304.

88.—*On the Inverted Toe Nail.*—By Dr. Edward Zeis. [This affection, from its frequency, the great suffering caused by it, and the impediment to the use of the foot in walking which it occasions, is of no trifling importance, and therefore anything calculated to throw light on its true nature and causes, and the most effectual remedies, becomes of interest.]

By almost every writer the entire affection, the inflammation of the soft parts, their suppuration, the intensely sensible fungous granulations which shoot up from the lateral edge of the nail, and cover the greater part of the latter—together with all the attendant suffering and lameness—and which, in many cases, continue for months and years—have been ascribed to the edge of the nail pressing upon or penetrating abnormally the soft parts—either in consequence of the too great breadth of the nail, its too arched form, or the unnatural downward direction of its edge; and hence the remedy that is proposed by different surgeons is either the destruction of more or less of the nail, the changing of its form, or the drawing out of its edge from the flesh, and the preventing its again embedding itself into it. They all consider that it is the nail which is in fault, and the whole of their attention is directed to correct its abnormal action upon the soft parts.

[Many of the operations hitherto proposed are extremely painful, and while few of them afford more than temporary relief, some even tend to increase the evil. Dr. Zeis has had frequent opportunities of seeing patients operated on by Dupuytren's method of extraction of the offending portion of the nail, and he found that in every case it was ineffectual, the free edge of the nail expanding laterally, and keeping up a constant irritation.

The new modes of treatment constantly met with in the medical journals are mostly mere modifications of the older plans. The most painful is that of Neret, who directs a spatula to be forced down beneath the nail to its root, and then for the nail to be torn out. Larrey's operation differs from the former only that the third of the nail is thus treated. Baudens removes the whole of the inverted edge, together with the spongy flesh in which it is embedded. Others advise the destruction of the nail, or a portion of it, by caustics, for which caustic potass and lime, and burnt alum have been used. Labat destroyed the root of the nail at once by the actual cautery. Donzel dissected back the skin from the root of the nail, filled the wound with charpie, and the next day with pâte caustique; removing the edge of the nail when the slough separated. Others objecting to the destruction of any portion of the nail, propose various plans by which it may be kept from contact with the inflamed portion of the soft parts until these are completely healed. Martin recommends a triangular portion to be cut out of the middle of the nail, the base being at the free edge, and then the cut edges of the nail to be drawn together by a suture of brass-wire. This, however, from the constant growth of the nail, can only afford temporary relief. Others propose to give the nail a flatter form, by thinning the centre, and applying compresses of different kinds, whilst Bressy, after shaving the nail as thin as possible, touches it six or eight times with lunar caustic, until it shrivels up, and its edges are in consequence drawn out of the soft parts; this, however, infallibly produces entire destruction of the nail.]

In many, though by no means in the majority of cases, the cutting the nail too short, is the primary cause of the affection. The soft parts, being no longer kept down by the projecting free edge of the nail, are forced, by the pressure of the boot or shoe in walking, against and even over the truncated end of the nail, and, as this again increases in length, it may be made to even penetrate into them—giving rise thus to inflammation, swelling, ulceration, and fungous granulations, with a degree of suffering, which often renders the slightest motion of the foot unbearable. The disease is most liable to occur in the great toe, in consequence of the greater amount of motion and pressure to which it is subjected in walking. The patient seeks to relieve his sufferings by constantly cutting away portions of the nail, but in so irregular and unskilful a manner as rather to increase than diminish the evil.

[Dr. Zeis considers it all-important to attend to the general health, which will usually be found more or less deranged, and says that when this is improved, the foot being kept at rest, the local disease will soon disappear.]

If, however, the disease has resulted from keeping the nail too short, the Dr. considers it indispensable that it should be allowed to attain its proper length, which, with the simplest dressings, and the avoidance of motion and pressure, is sufficient to effect a perfect cure. So soon as the nail acquires the slightest projection, he is in the habit of introducing beneath it, by means of a fine probe, a small portion of charpie, and to prevent the falling out of this, he covers the end of the toe with adhesive plaster, spread upon gold-beater's skin, which adapts itself better to the parts, and produces a less amount of pressure than when it is spread on silk or linen. The toe is then to be bathed frequently, during the day, in warm water.

If the soft parts, at the point of the toe, are in so swollen a condition as to interfere with the dressing just directed, or completely to cover and conceal the edge of the nail, Dr. Zeis is in the habit of removing them by the knife.

" Even in those cases," he remarks, " in which the nail has been cut so close as to be reduced to one-half its length, under the above treatment, it will require but two, or, at the furthest, three months to effect a permanent cure, and to restore to the nail its proper length and natural shape.

" Much more obstinate, however, are those cases in which the disease affects, at the same time, or is entirely confined to, the side of the nail. These are, especially, the cases in which the destruction of the whole or a part of the nail has been considered indispensable to the cure. I have, however, in such, seldom failed to secure the entire and permanent relief of the patient by rest, the frequent use of the foot bath, and the removal, by the knife, of the fungous granulations or spongy and morbidly sensible flesh, by which the edge of the nail becomes covered. I will not, however, pretend to deny," he adds, " that cases of a very aggravated character may occur, in which the unhealthy condition of the ulceration, seated beneath the nail, will require the loosened edge of the nail to be cut away, that our applications may be applied directly to the ulcerated surface, and also to prevent the constant irritation which is kept up in it by the detached portion of the nail. It is never necessary to destroy the whole or any part of the nail, even under such circumstances."

American Journal of Medical Science, Jan. 1845, *p.* 166.

89.—ON THE DIAGNOSIS AND TREATMENT OF FRACTURES.

By — **Stanley**, Esq., of St Bartholemew's Hospital, London.

In certain cases wherein the occurrence of fracture is not plainly indicated by the mobility or distortion of the part, or by the existence of crepitus, there is one strongly presumptive sign of it, the attention to which has often helped us in doubtful cases, especially in the instances of fracture of the lower end of the tibia and fibula, also of the head of the tibia; this sign is, an acute tenderness of the periosteum manifested in handling the part, combined with deep-seated œdema from serous effusion into the cellular tissue around the periosteum. An experienced hand and eye will readily distinguish these circumstances characteristic of fracture, from the general swelling and tenderness of the soft parts, the result of simple contusion. A man at the present time in the hospital was admitted shortly after he had slipped down in the street; there was no distortion of the leg, and no yielding or crepitus could anywhere be detected; but such was the acuteness of the pain occasioned by pressure of the lower part of the tibia, with the evidence, besides, of the deep œdematous swelling over this part of the bone, that the fracture of it was suspected; and accordingly the limb was confined in splints. Ten days afterwards, an oblique ridge on the lower and front part of the tibia shewed that the bone was broken, and that the diagnostic sign of the fracture had been of some value in determining the treatment. Crepitus is frequently but a doubtful sign of fracture, especially in the injuries of bones near their articular ends; here it may be caused by an alteration of the synovia within the sheaths of the surrounding tendons, or within the contiguous joint; and, in injuries of the hip or shoulder, when the displaced head of the femur or humerus lies in contact with a surface of bone beyond the articular cavity, in moving the limb a grating sensation may then be communicated to the fingers, so closely allied to that of fracture, as to be with difficulty distinguishable from it. In the shoulder, for instance, when the head of the humerus is driven between the subscapularis muscle and the scapula, the movements of the arm will communicate to the hand of the surgeon a grating sensation not distinguishable from the crepitus of fracture. As it concerns the diagnosis of fracture, it must be borne in mind, that by the operation of the force which has broken a bone, its ends may get so firmly impacted together, as not to be separable without violence; hence it has happened that a man with both bones of his leg broken has been able to bear considerable weight on the limb. I had a patient whose tibia and fibula were broken about their middle, by the kick of a horse; yet he contrived, with the help of a stick, to walk from Highgate to the hospital, a distance of between four and five miles. Under circumstances of doubt, assistance in the diagnosis may be obtained by ascertaining in what manner the accident occurred; and here it is to be recollected, that a shock imparted to the distant part of a limb may cause the fracture of the shaft of the femur or tibia. A man had just raised a sheep-hurdle from the ground, and was holding it in his hands, when a gust of wind turned him round with the hurdle; the great toe of his left foot coming against a stone, he immediately felt and heard his leg break; his wife, and another man standing by, also heard the crack. He was directly brought to the hospital, and the tibia was found broken in two places, transversely through its middle, and obliquely through its lower third. Also, on occasions when it would not be expected, an inordinate or spasmodic action of the muscles surrounding a bone may cause its fracture. A coachman, in descending from his seat, felt a sudden twist in his limb; and from that instant he was unable to bear weight on it; he contrived to reach the ground on his other leg without falling, and was directly brought to the hospital, when there was ascertained to be a fracture of the shaft of the femur, just below the trochanters.

Adjustment of fractures.—For this object, in many instances, nothing more is required than that the limb should be placed in an easy posture; directly this is done, the ends of the bone adjust themselves perfectly well. And I have learned by experience, that when one fair effort, by the extension of the limb and manipulation of the broken bone, has failed to effect the adjustment of its ends, there is but little probability of success from a repetition of the same proceedings, to which the obvious objections are, the severe pain they occasion, and the injury they do to the surrounding soft parts. When one well-directed effort by extension of the limb and manipulation of the broken bone has failed to effect its adjustment, we must trust to the chance of its adjusting itself; and if it does not do so, we may assume the existence of one or other of the following obstacles to adjustment, over which extension of the limb, or other proceeding we may adopt, can have but little influence,—that the displaced ends of the bone have become firmly impacted together; or that the bone has been broken in two places, and the middle piece displaced, upon which the extension of the limb has no effect; or that a displaced tendon or muscle has got between the ends of the bone; or that one end of the bone has been driven into, and has become firmly impacted in the substance of an adjacent muscle; or that the muscles on one side of the limb having been lacerated, the muscles on the opposite side, their antagonists, acting inordinately upon the broken bone, have displaced it.

[Fractures which are slow of union are happily much more common than fractures which will not unite. Until a few years back, if it were ascertained that a fracture at the end of the usual period had not united, splints were applied, and the patient had still to keep in bed, and if the bones remained ununited after a few weeks more, the fracture was declared incurable.]

But we have now learned by experience that in the event of a fracture failing to unite within the usual period, methods are to be adopted far more gentle, and, what is more important, far more likely to be successful, than any one of the severer proceedings just indicated. These methods are, exercise of the limb for the advantage of the action of the muscles surrounding the broken bone, maintenance of firm pressure against the portions of bone, that they may be kept steadily in contact, and if possible by their periosteal surfaces.

Influence of the action of the muscles around the slowly uniting fracture. Of this there can be no doubt; it is evidenced to us in the many instances of fracture of the tibia not firmly united within the ordinary period, wherein the patient has been desired to move about on crutches, not bearing weight on the limb, but swinging it about freely, and in a short time the uniting medium, which was flexible, is found to be perfectly firm. I lately had in the hospital a woman, aged 32, with a fracture of the femur, at the junction of its upper and middle third; it was treated strictly by confinement on the back, with the application of a long splint to the outer side of the limb. At the expiration of two months, the ends of the bone were ascertained to be freely moveable. The thigh was then kept firmly encased in leather splints through the next two months, at the expiration of which the ends of the bone were found to be still freely moveable; it was now determined again to apply the leather splints in a manner to maintain firm pressure against the ends of the bone, and besides, to encase the thigh in the splints composed of layers of linen cemented together by the mixture of white of egg and flour, and around these to apply the starched roller. The limb being thus secured, the patient was desired to move about freely on crutches. Almost from the commencement of this plan, the woman began to express a consciousness of firmness in the limb of which she had not before been sensible. After another six weeks, the bone had become so firm that she could bear weight upon it, and she left the hospital walking perfectly well. I could draw no other conclusion from this case than that the firm union of the fracture was mainly attributable to the adoption of the proceedings having for their object the free action of the surrounding muscles. Since, in this case, the firmness of union had not commenced at the expiration of four months from the occurrence of the fracture, it almost warrants the conclusion that no period is too late for the commencement of that stage of the reparative process of fracture upon which the firmness of its union depends.

Influence of pressure upon the ununited fracture.—The application to the limb of stiff leather splints, or other apparatus calculated to maintain firm pressure against the bone, is undoubtedly a most important part of the treatment of ununited fractures, and the merit of first establishing it belongs to Mr. Amesbury. It should not be the object to maintain the fractured ends of the bone in contact, but rather that the two portions of the bone should overlap, to allow of their periosteal surfaces being firmly pressed together, for as the tissue of periosteum is more readily disposed to the deposit of osseous matter than the tissue of bone, accordingly by the actual and firm contact of the periosteal surfaces the advantage is obtained of a better chance of the union of the fracture, which well compensates for the shortening of the limb consequent on the overlapping of the two portions of the bone.

On the Use of the Immoveable Apparatus.—The treatment of fractures by the immoveable apparatus, as it is termed, has been of late especially adopted by Dr. Seutin, Chief Surgeon of the Hospital at Brussels. The object aimed at by this treatment is to avoid the inconvenience of confinement, by enclosing the limb in an apparatus sufficiently strong to prevent the separation of the fractured surfaces, and of sufficient lightness to allow the limb to be moved about with ease. Varieties of apparatus have been recommended for this object; that which I employ in the hospital consists of the splints, composed of layers of linen, cemented together by a mixture of egg and flour, and of the starched roller. The excellence of the splints thus constructed is, that with the firmness of the case they form, they are so exactly moulded to the inequalities of the limb, that when confined to it by the turns of the roller, not the least movement of the limb within the splints can occur; and this is obviously essential to the quietness of the ends of the bone. Curiously enough this turns out to be the revival of a practice adopted in bygone times. Cheselden, in his Anatomy, states "that a professed bone-setter living in Westminster communicated to him the following method of treating fractures; this way was, after putting the limb in a proper posture, to wrap it up in rags, dipped in white of eggs, mixed with wheat flour; this drying, grew stiff, and kept the limb in good position;" and in his observations appended to Le Dran's Surgery, Cheselden observes, "there is no bandage equal to this for a fractured leg. I always use it, leaving that part upon the tibia very thin, that if it grows loose by the abatement of swelling, I then cut out a piece, and bind it closer. Upon a journey, I once set the cubical bones of a gentleman's arm that was broken, and making use of this bandage, he the next two days made long journeys without any inconvenience, and at the end of forty days took it off, and was perfectly well."

There are objections to the indiscriminate use of the immoveable apparatus, and especially to its application upon a fractured limb immediately after the receipt of the injury; still, however, under certain circumstances, it is a most valuable addition to our plan for the management of fractures. Upon the subsidence of the inflammation and swelling immediately consequent on a fracture, the limb may in general with safety be enclosed in such splints as I have described, and which, when properly applied, will prevent any motion between the ends of the bone, and with a fracture of the femur as of the tibia, by the application of these splints, the patient will be enabled to move about on crutches, and even bear weight on the limb long before the fracture is firmly united. In several cases of fracture of the tibia I have by means of this apparatus been enabled to discharge the patient within little more than a fortnight from the occurrence of the accident, when, for particular reasons, it has been an object of importance to leave the hospital at this early period, instead of remaining here the usual time of five or six weeks.

In another class of cases the greatest benefit has been derived from the use of the immoveable apparatus. I allude to fractures of the thigh and leg in aged persons, in whom, from their not bearing confinement well, the stomach has become deranged, with failure of appetite, and obvious decline of the vital powers; directly these changes are noticed, the injured limb is enclosed in the immoveable apparatus, whereby the patient is enabled at once to get up and move about on crutches, and the unfavourable symptoms have immediately disappeared. I feel certain that by adopting this line of conduct the lives of some old people have been saved, who otherwise would have sunk.

Medical Gazette, Nov. 29th, 1844, *p.* 273.

90.—*Treatment of Fractures.*—By B. B. Cooper, Esq., F.R.S., Surgeon to Guy's Hospital. Immediately after fracture of any bone, when there is a tendency to great tumefaction, it is wrong to apply either splints or bandage, for any restriction of swelling is liable to produce gangrene: under these circumstances, the limb should be placed on a pillow in a semi-flexed position, so that the muscles may be perfectly relaxed, and the bones placed as nearly as possible in their natural position; which circumstances may be ascertained, whatever may be the swelling, by the immediate comparative ease of the patient. An evaporating lotion is then to be used; or should there be any tendency to involuntary contraction of the muscles, strips of soap plaster may be gently applied around the limb, which, by causing a secretion beneath it, diminishes the irritability of the muscles, as well as the urgency of the inflammation. If it can be avoided, purgative medicines should not be given, as they would produce a necessity for frequent change of position: but should their use be considered essential, such medicines are to be given as are least likely to keep up a continual action on the bowels. As soon as the tumefaction and inflammation have subsided, which, under the treatment recommended, generally happens in three or four days, well-padded splints should be applied, and retained in their situation by broad pieces of tape resting firmly on the splints, but which should not be anywhere in contact with the limb.

It has been stated, that a bandage should never be applied immediately after the occurrence of fracture: however, it may be considered as an exception to this rule, that when a portion of fractured bone has wounded and irritated a muscle, a bandage is the best means of relieving its spasmodic action. When fracture of a bone happens in the neighbourhood of, or passes into a joint, local bleeding, by means of leeches, is always necessary, and may require to be frequently repeated: even the necessity for general bleeding may sometimes be indicated, when there is much constitutional irritation: in which case, calomel and opium will also be found of the greatest service. In fractures into joints, when inflammation becomes so violent that the surgeon sees that anchylosis must necessarily occur, the joint should be placed in such a position, as to render the limb as useful as possible. Under these circumstances, for instance, if the elbow-joint be the one affected, the fore-arm should be semi-flexed; by which position the patient will afterwards be able to feed himself. In the knee-joint, the leg should be very slightly flexed upon the thigh; by which method he is better able to direct the foot, and the limb is rendered more manageable in the sitting posture.

In the ankle-joint, we should endeavour to procure a union with the foot perfectly flat; whereby the patient will afterwards enjoy considerable use of his limb.

Medico-Chirurgical Review, Jan., 1845, *p.* 88.

91.—*On the Employment of the Starched Bandage in Certain Cases of Fracture.*—By W. Lyon, Esq., Lecturer on Surgery. [Mr. Lyon relates a case of fracture of the femur at the junction of the upper with the middle third, which occurred to a man 77 years of age, occasioned by falling out of bed. The limb was treated by Desault's plan, and generous stimulating diet allowed. The skin over the sacrum soon began to give way, and notwithstanding the use of air pillows and other means, an ulcer four inches in diameter formed, exposing the bone, from the irritation and exhaustion produced by which the patient rapidly sank. The only medium by which the fragments of the unusually thick and brittle femur were united, was a few osseous particles interspersed amongst the soft tissues around the fracture, which were thickened, infiltrated, and vascular.

The unfavourable result in this case induces us to inquire, whether in weak persons of advanced age it may not be advisable in fractures to follow some other than the ordinary mode of treatment; a mode possessing both immobility and lightness. The only plan by which these are attainable is by the employment of the leathern splint and starched bandage. Mr. Lyon says,—]

Were I again to meet with a fractured femur in a person on the verge of 80, I would fit a piece of undressed leather, of length sufficient to extend from a little above the pelvis to the feet, broad enough to cover a third of the hip and limb, and of shape corresponding to the member when slightly flexed. This being softened by water, I would cover it with a thin layer of carded cotton, or two or three pieces of cotton cloth, and secure with gentle firmness to the body and limb by starched bandage. Being dried, it would form a firm, tight mould for the limb, and I would permit and urge the patient to change of position in the bed, to rise from it as early as possible, and take exercise with the aid of crutches.

In this manner his health would be preserved, sloughing be prevented, and union likely insured.

There might be deformity, or even non-union, but even the latter is a slight evil when compared to the risks of confinement, which, in such circumstances, should never, in my opinion, be encountered.

Medical Gazette, Dec. 20*th*, 1844, *p.* 377.

92.—*Treatment of Mammary Abscess by the Breast Pump and Syringe.*—By Alexander Wood, M.D., F.R.C.P., &c. [This very annoying affection most commonly occurs during lactation, and is then more unmanageable than when the breast is in its natural state.]

It is preceded by inflammation which is either acute or chronic, and as Sir Astley Cooper has succinctly expressed it—"is adhesive in the first stage, suppurative in the second, and ulcerative in the third."

[Notwithstanding the most prompt and judicious treatment of the first stage, suppuration will occasionally take place. As the inflammation by which these abscesses are preceded is either acute or chronic, so is the abscess itself. When chronic, they are apt to give rise to deep-seated sinuses, filled with a soft fungus.

Previous to the time of Mr. Hey, the practice often was to extirpate the breast for this affection: he however suggested, as preferable, dividing the sinuses throughout. Sir A. Cooper, instead, recommended that they should be syringed with a solution of two or three drops of strong sulphuric acid to an ounce of rose-water, and that the same should be applied as a lotion to the breast.

It is very evident that, however treated, this is a very formidable affection, and it is of great importance to prevent the formation of the sinuses. For this purpose, Sir Astley Cooper recommends early and free opening of these abscesses, particularly if there be much fever, and symptoms of hectic, *unless* the abscess be deeply seated, in which case the aperture closes, and ulceration will still continue.]

A plan of treatment, says Dr. Wood, has occurred to me, which, as far as I know, is novel, and its results, in the only three cases where an opportunity has occurred of trying it, have been such as to warrant me in suggesting it for the consideration of my professional brethren.

In obedience to the precepts of Sir Astley Cooper, as soon as the indistinct fluctuation, or rather the boggy feeling, by which the formation of matter in these abscesses can be detected, is distinctly ascertained, let a small bistoury or abscess lancet (the common lancet will sometimes not penetrate deep enough) be carried down until the matter begins to escape. After all that can be squeezed out by the pressure is removed, let the breast-pump be applied over the orifice, and the rest of the matter be drawn out. The sinus is then to be injected with some astringent solution, by means of a small syringe. The syringe employed is the small glass one for the urethra, sold by most apothecaries. The lotion I have hitherto used is the one recommended by Mr. Hey, though it may be doubtful if it possesses any peculiar advantages.

℞ Aquæ puræ, ℥xv.; spt. rosmarin., ℥i.; spt. lavandul. comp. ʒi.; zinci sulphat., gr. xxx. M. fiat lotio.

The sulphuric acid lotion of Sir A. Cooper will probably answer as well.

A pledget of lint dipped in the lotion is then to be applied outside, and covered with oiled silk; over this a compress may be placed, and firm pressure maintained on it by means of adhesive plaster. In some cases the walls of the abscess will unite at once, and all that remains to be done is to trust to time for the removal of the surrounding induration, or to attempt to discuss it by frictions with camphor liniment, mercurial or iodine ointment, or the application of the emplast. ammoniaci cum hydrargyro.

Where the surfaces do not thus unite, the falling in of the breast, produced by the exhaustion of the glass, will be found to have disappeared; the cavity in such cases has only to be injected two or three times a-day, which will serve at once to keep the opening free for the discharge of matter, and will also tend to arrest the further extension of the ulcerative process.

The treatment of acute and more superficial abscess may be conducted on the same general principles. The early evacuation of the matter saves the patient much suffering, and also enables the nursing on that breast to be resumed at a much earlier period. The cicatrix is also much smaller than in cases where the matter is allowed to discharge spontaneously; indeed, if the incision be made in the direction of the natural folds of the breast, that is, radiating towards the nipple, the cicatrix will in a short time be imperceptible.

Northern Journal of Medicine, Jan. 1845, *p* 144.

93.—*On Amputation of the Penis.*—By ROBERT BARNES, M.B., L. [Mr. Barnes publishes an account of the mode in which M. Ricord avails himself of the process of contraction after amputation of the penis to keep the urethra open.

The principle of most surgeons in this operation is to counteract contraction.]

M. Ricord's principle is to avail himself of this process of contraction, and turn it to account in preserving the orifice of the urethra patent. The proceeding is this;—having performed the amputation, with the precaution of preserving sufficient skin, and no more, to sheathe the corpora cavernosa, and secured the vessels, the surgeon seizes with the forceps the mucous membrane of the urethra, and with a pair of scissors makes four slight incisions, so as to form four equal flaps; then using a fine needle, carrying a silk ligature, he unites each flap to the skin by a suture. The wound unites by the first intention; adhesions being formed between the skin and mucous membrane, which become continuous, a condition analogous to what is observed at the other natural outlets of the body. The cicatrix then contracting, instead of operating prejudicially, as in the old methods, tends, on the contrary, constantly to open the urethra, whilst a perfect covering is provided for the ends of the corpora cavernosa. In the spring of 1843, I had the satisfaction of seeing this ingenious operation performed by M. Ricord, at the Hôpital du Midi; when I saw the patient, eight days afterwards, the sutures had been removed, union had taken place between the skin and mucous membrane, and the urine had freely passed without the intervention of a catheter. I saw this patient again when he was about to leave the hospital, at which time the cicatrix was complete, the orifice of the urethra patent; there was an excellent stump, and, in short, the operation appeared to be perfectly successful. M. Ricord has performed the operation in other cases, and, he reports, with the same happy results. I have performed the operation many times on the subject, and have found no difficulty in the execution of it.

Another inconvenience mentioned by Mr. Hancock, the difficulty of directing the stream of urine, is one which becomes troublesome in proportion to the shortness of the stump. It may be obviated by the contrivance recommended by Ambrose Paré. The patient must provide himself with a funnel-shaped canula, made of box, ivory, or metal, the base of which, being applied over the stump, and resting on the pubes, the other end will serve to carry the urine clear of the person.

Lancet, March 8, 1845, *p.* 266.

94.—ON TRACHEOTOMY.

By Robert Liston, Esq., F.R.S., Senior Surgeon to University College Hospital, &c.

[The larynx occasionally requires to be opened during the existence of ulceration on some of its upper portions. When this has been accomplished, Mr. Liston recommends that the surgeon should touch the parts with a solution of nitrate of silver, by means of a piece of sponge at the end of a bent probe, carried upwards through the wound in the throat. It may happen that it is not necessary to open the trachea, but only to make an orifice in the crico-thyroid membrane.]

In cases where there is obstruction at the rima glottidis, as where swelling has followed a scald of the glottis, the high operation might answer, and in cases where a foreign body, not of large size, is lodged in the ventricle of the larynx, an opening in the crico-thyroid membrane might suffice, and it is much simpler than tracheotomy. It can be done at once with any pointed instrument that comes readiest to hand, as a penknife, and without any great incision. You feel for the space between the cricoid and thyroid cartilages, and there make a longitudinal incision, right into the tube. This might be resorted to where a person is suffering from the lodgment of a foreign body in the œsophagus, and in such cases it has been done successfully too. A patient may labour under serious and alarming obstruction of breathing in consequence of some large body pressing on the back of the trachea, and you may have nothing at hand to displace or extract it, but you may save the patient in the meantime by performing laryngotomy, and allowing him to breathe, until you can examine what the foreign body is, and take proper means for its removal. In the majority of cases the operation of tracheotomy is to be preferred, as for the extraction of loose foreign bodies, or of those lodged in the lower part of the canal. In all diseases of the larynx and glottis you will also act more wisely by opening the windpipe. You thus get a large opening, and in cases of disease you make the opening far removed from the affection, and in a part of the canal which you are certain is quite pervious and clear: you thus ensure the free breathing of the patient.

This operation, as I said before, is one not attended with great difficulty or danger. The wound can be made down upon the windpipe without involving any vessel of importance. There are sometimes arterial branches running across the windpipe; but this is very rare. The thyroid arteries are sometimes wanting on one side, and their place is supplied by branches going from the opposite side. This is an uncommon occurrence: on looking over all the anatomical collections in the kingdom you will not find many preparations shewing this variety. There is no muscular substance to divide; but there are a few veins, lying over the windpipe and the thyroid body, to be avoided. The wound heals immediately; everything is in favour of it; and it is therefore very different from a wound across the windpipe. The action of the sterno-mastoid muscles will tend to bring the superficial parts of the wound together; and the sterno-hyoids will produce the same effect with regard to the deeper parts. If you make an opening to extract a foreign body, and succeed, the wound will heal as far as you wish it to do; you must, in fact, try to keep it open for some time; you must not dream of sewing it up, because blood, even in a small quantity, might insinuate itself into the windpipe, or become infiltrated in the cellular tissue, or collect in the cavity of the wound, and cause injurious or fatal pressure: you put a bit of lint betwixt its edges, and cover the surface of the wound with a pledget dipped in cold water, which is to be frequently renewed. After the incision has been made six or eight hours, you may then bring it together, or apply some strips of plaster: it will generally heal with great rapidity. You find, in cases where a foreign body has been lodged in the wound for many days or for many weeks, or even months, that upon its withdrawal the parts contract so much, that in twenty-four hours, if it were necessary to introduce an instrument again, you will find it very difficult to accomplish.

There is no difficulty in getting down to the windpipe in the adult patient, if he is at all steady, and willing, as most patients who have suffered from difficulty of breathing are, to submit to the operation. You place the patient on a chair, (this is better than the recumbent position,) turn his head back, and have an assistant to support it. You make an incision from the top of the sternum upwards towards the cricoid cartilage, fully an inch in length, through the skin and the subjacent tissue. You expose, at once, the sterno-hyoid muscles, and cut between them, push the veins out of their place downwards, clear the windpipe upwards, by pushing the isthmus of the thyroid body out of the way, if it is there, and then you are quite prepared to cut into the passage. You desire the patient to swallow his saliva, and, taking advantage of the windpipe being pulled upwards, you push the knife into it at once, with the back towards the top of the sternum, and, by a little sawing motion, divide three or four of the rings. There is generally no difficulty in doing this, and no bleeding; but if any vessel be wounded you may tie it, or wait a little before you open the windpipe. If you operate for the extraction of a foreign body, the probability is, that it will slip out of itself, at once; by the relief to the respiration, and the cessation of struggling and exertion on the part of the patient, the bleeding, principally venous, will cease immediately. If there is any arterial bleeding, you will take care to arrest it; you then dress the wound, and allow it to come together in due time. If you operate for an obstruction at the top of the windpipe, you must keep the opening in the tube pervious; and for this purpose you introduce a properly-formed canula. Veterinary surgeons do not hesitate to cut a large square hole in the trachea, and some surgeons practising on the human body have proposed to cut out an oval piece of the rings and their connecting membrane; but that is, at the least, quite unnecessary, and, indeed, it may be hurtful, by leading to an after contraction of the windpipe. It has been recommended to keep the wound open by a spring, like the dissecting forceps; but this instrument cannot be well or long retained. There is no sound objection whatever to the introduction of a proper canula. I have had as much experience as most people in these cases, for I must have performed the operation at least twenty times, and I have used this tube in all those where it was necessary to provide for the free breathing of the patient. You might suppose that it would cause irritation; but you will recollect that the lower part of the air passage is by no means very sensible. By introducing a foreign body upwards, great irritation is produced, but downwards, there is little or no inconvenience caused. Pass the point of the tube then into the opening you have made, and slip it home at once. There is a little coughing from the cold air passing down; it gives the patient some alarm; but that passes off, and the breathing goes on without interruption. Then there is a discharge of mucus, and you instruct the patient how to get rid of it. He puts his finger upon the tube and narrows it, and then he can cough nearly as well as through the natural passage. By narrowing the opening through which the air is passed, the mucus is ejected with the air. The tube is taken out from time to time, and replaced and after a few days, the patient can do this himself. There is no occasion for putting in a tube as large as this throughout the cure; you introduce a smaller one, and through this he can perhaps breathe more freely than at first. It has been proposed to thrust a trocar and a canula into the windpipe: here is the instrument—a small, straight, lancet-shaped trocar, with double tube—that used to be sold for that purpose. But the man who invented this must have tried it only on the dead body; he could have known nothing of disease, nor of the function of respiration. The patient could not breathe, nor could you get a foreign body through an opening so made. If any air passed through it, it would compensate but little for any narrowing at the top of the windpipe. A large sharp-pointed stilet has been adapted to the curved canula, but it is not very surgical to attempt to plunge this into the windpipe; the probability is, that you would go to one side, instead of into it—more especially in children. You may, if you choose, have a double canula—one to put in, while the other is taken out and cleaned.

In children you may sometimes find difficulty in performing the operation. The neck is short, and often very fat. The space in which you cut is very limited; the windpipe also is exceedingly small, and in all cases where the operation is required, the breathing is embarrassed, and the parts are in constant motion. You must have the patient well secured; you cut down upon the fore part of the neck, right in the median line, expose the sterno-hyoid muscles, separate the connecting cellular tissue, and clear the trachea. You cannot make a young subject elevate the windpipe well or certainly, by swallowing his saliva; you must therefore stretch and fix the tube before cutting into it; you do this by putting a sharp hook in it. You then pull the larynx upwards, push in your knife, and make a sufficient opening.

In some individuals, when the operation is performed for disease at the rima glottidis, the canula may soon be removed safely, and the wound permitted to heal; but sometimes it must be worn for several weeks. In many cases the box of the larynx may have fallen in so much from extensive ulceration, that the patient must wear the canula for some time; and if you prevent cold air getting in he goes on very well.

The same precautions are to be observed here as in wounds after the patient has attempted suicide; the wound must have a covering of loose texture to prevent cold air getting into the passages.

Lancet, Nov. 23, 1844 ,*p.* 251.

95.—*Coin Removed from the Larynx by Inversion of the Body.* By Jas. Duncan, Esq., M.D., Surgeon to the Royal Infirmary, Edinburgh. [Dr. Duncan relates a case of this accident which occurred to a man who was amusing himself with tossing up a shilling and catching it in his mouth, when it slipped into the larynx. At first, violent coughing with great dyspnœa were produced, but these after some time subsided. From the favourable result of Sir B. Brodie's case, it was determined to try inversion of the body, which plan had also occurred to the patient himself. Instruments were, however, kept ready in case the shilling should change its position so as to produce suffocation. The mode in which the experiment was performed, though rough, was quite effectual.]

The man was placed with his shoulders against the raised end of a pretty high sofa, and then being seized by three of the most powerful of those present by the loins and thighs, he was rapidly inverted, so as to bring the head into the dependent position, and, after a shake or two, Dr. Simpson at the same time moving the larynx rapidly from side to side, the shilling passed into the mouth and fell upon the floor. Not the slightest cough nor dyspnœa was produced, and the patient immediately started up, delighted with the result. He was now perfectly free from uneasiness, and there was a marked change in the character of the voice. He had not the slightest subsequent bad symptom.

As matters turned out, the practice was perfectly successful, and the patient was fortunate in escaping the pain and danger of an operation; but I am not sure that the success which followed should guide the practice in similar cases, at least in those in which the coin is smaller and has descended into the trachea or bronchus, as in Sir B. Brodie's case. In this case the shilling must have been lodged with its edges in the direction of the longest axis of the rima, in the most favourable position for its escape, and in the one in which it was least likely to be so changed in position as completely to obstruct the passage of the air. Had the coin been a smaller one, and in the trachea or bronchus, the danger of suffocation being produced would have been much increased, and the operation of tracheotomy might then have been required to be performed when the patient was in a state of convulsive agony. On referring to Sir B. Brodie's case, I find that the same experiment was tried, but that it had to be abandoned in consequence of the "violence of the cough produced, and the urgency of the choking sensation," and that it was not until after an opening was made into the trachea so as to act as a safety-valve, and after the attempts to remove the half-sovereign with the forceps had failed, that the surgeons ventured to repeat it. Even, however, had matters turned out as I dreaded in this case, I have no doubt that the trachea could have been opened without any great difficulty, and before any serious consequences had ensued, as it was prominent, and could have been reached with facility.

Northern Journal of Medicine, Feb., 1845, *p.* 220.

96.—*On the Diagnosis and Treatment of Syphilitic Diseases.*—By John C. Egan, M.D., F.R.C.S.I. [Dr. John C. Egan, of the Westmoreland Lock Hospital, after remarking on the various forms of syphilis which have come under his observation, with their characteristic symptoms and most eligible treatment, thus recapitulates the leading points:]

Firstly.—I have observed the simple superficial ulcer, unattended with indurated margin or base, give rise to a papular eruption, pains resembling rheumatism, and increased vascularity of the throat, generally accompanied with enlarged tonsils. In this form I have never witnessed the occurrence of rupia, nodes, or ulceration at the back of the pharynx. In this class, for the most part treated without mercury, constitutional symptoms occurred far more frequently, but were of a milder description than in those where an opposite plan of treatment was adopted. When topical applications fail, I have recourse to mercury for the purpose of accomplishing a cure.

Secondly.—That strong presumptive evidence has been afforded, that the matter of gonorrhœa in its incipient stage is capable of producing ulceration or abrasion of the mucous membrane, which may be followed by a mild description of secondary symptoms; but not having been able to substantiate this opinion by the process of inoculation, I cannot, as far as my experience goes, lay it down as an ascertained fact.

Thirdly.—That the excavated ulcer, with indurated base and margins, commonly described as the Hunterian chancre, has, in my limited number of cases, been succeeded by a scaly eruption, and excavated ulcers of the tonsils, and that in those cases alone mercury deserves the name of a specific.

Fourthly.—That the phagedenic ulcer where it has existed *ab initio*, does not owe its characters to any peculiarity of constitution, but to a specific virus, as is evinced in the dissimilarity and inveteracy of the secondary and tertiary symptoms, and that in such cases mercury is decidedly injurious; and,

Lastly.—That all the secondary forms of syphilis, with the exception of iritis, are curable without the aid of mercury: the cure, however, is much more protracted, but relapses are far less frequent.

[With regard to the use of mercury, Mr. Carmichael, in a conversation which followed the paper of Dr. Egan, says,]

1st. I do not think it necessary in the treatment of the simple primary ulcer without induration, nor for the papular eruption, and other constitutional symptoms it produces; but should the eruption linger into the fourth or fifth week after it has desquamated into scaly spots or blotches, mercury in alterative doses, either in the form of Plummer's pill or the proto-ioduret of mercury, will be of service in clearing the skin of the eruption, and in removing the pains of the joints, which are constantly present in this form of venereal. But I protest most strongly against the use of mercury at the period when the eruption first appears in its papular form, at a time that it is usually preceded and accompanied by considerable fever, like all the other exanthemata, to which class of Cullen it obviously belongs. If we should exhibit mercury prematurely during the eruptive stage of this as well as the other forms of disease, the scaly excepted, we may possibly clear the skin of the eruption, but in all probability it will return again to the great disappointment of the patient and perplexity of the medical attendant.

2nd. For iritis I would give mercury, so as to excite its full effect upon the system, and at the same time not neglect the usual antiphlogistic measures to remove this dangerous inflammation.

3rd. For nodes I would exhibit mercury, and I think the iodide of that mineral for their removal is superior to any other preparation.

4th. For phagedenic primary ulcers I have always found mercury most injurious. They are most successfully treated by the application of strong nitric acid, immediately followed by a douche of cold water. The same application is also the most efficient for phagedenic ulceration of the throat, which if not checked will soon extend over the velum, uvula, and back of the pharynx, from whence it will spread upwards into the nares, and downwards into the larynx. In either of which situations I need not state the difficulty and danger of the case. Instead of the douche of cold water, in this situation inadmissible, I employ a probang, the sponge moistened in a solution of soda or potash will neutralize any superabundant acid applied to the ulcers. During the eruption of pustules or tubercles which cause those crusts termed rupia, I have found mercury injurious, although its exhibition may at first flatter both patient and surgeon that the disease is yielding to this remedy. But the natural tendency of this eruption is also to become scaly after it has existed several weeks or months. This scaliness is a sign that the disease is on the decline, and indicates that mercury in alterative doses may then be employed with safety and advantage. Should any of the constitutional ulcers on the skin spread after the rupia crusts fall off, their progress may also be effectually checked by the application of nitric acid to their phagedenic margins. They of themselves first show signs of healthy reparation in their centres, which need not therefore be meddled with. Mercury in this stage of the disease should not be exhibited. Hydriodate of potash, sarsaparilla, country air, and the tranquillizing effects of opium, should the patient be harassed by extensive ulceration, are the constitutional means most to be relied upon.

5th. For the true Hunterian chancre with hardened edge and base, and for the scaly eruption which attends it, as well as the deep excavated ulcer of the tonsil, nodes, and other symptoms belonging to this form of disease, mercury may be esteemed a certain and expeditious remedy.

Dublin Medical Press, April 2, 1845, *p.* 215.

97.—*On Infantile Syphilis.*—By GOLDING BIRD, A.M., M.D. [In the treatment of congenital syphilis, marked by copper-coloured blotches over various parts of the body, Dr. Bird has found that two grains of hyd. cu creta, continued for a fortnight or so, by which time the eruption has usually faded very much, and then the administration of pot. iodid gr. i in ʒii syr. sarzæ, ter die, will soon effect a cure. Dr. Bird remarks that syphilitic eruptions are exceedingly frequent amongst the infants of the lower classes, and that the simple treatment just mentioned is very effective in their cure. There are few affections among children, the treatment of which is more satisfactory than that of syphilitic eruptions; indeed, they frequently seem to fatten upon their medicine. If the mercury cause diarrhœa, it is sufficient to suspend its use for a time. The diagnosis of this disease is frequently mistaken, though of great importance, as whilst it readily yields to proper treatment, it is extremely obstinate when mismanaged.]

There is seldom any real difficulty in the diagnosis of these cases when once the practitioner has learnt to recognise them. The characteristic *snuffling* will often enable him to recognise the existence of disease, even before he has confirmed his opinion by visual examination. The puckered mouth, the position of the very characteristic eruption round the lips and anus, in addition to the peculiar varnished and fissured appearance of the parts from which the scales have faded, will seldom if ever fail to convert a suspicion of the true nature of the disease into positive certainty.

Condylomatous excrescences from the margin of the anus have never, in any of the cases, accompanied the earliest development of the syphilitic affection, but were always secondary, being observed in those children only whose primary affection was neglected or incompletely eradicated. When the eruption occurring on the nates and face in the first few weeks of life had been promptly treated, no condylomata appeared on the anal margin, at least so long as the children were kept in sight. But on the contrary, when the eruptions were neglected, condylomata were the almost certain results. I have not treated any case by iodide of potassium alone, although this drug appeared to be of peculiar service after the mercury had produced a decided effect on the disease. In one case, however, in which an infant five weeks old had syphilitic sores on the nates and face, I ordered its mother, a tolerably robust woman, to nourish the little patient exclusively by the breast, and directed her to take iodide of potassium in five-grain doses thrice daily. As this valuable drug soon pervades all the fluids of the body, and rapidly finds its way into all the secretions, I hoped to succeed in curing the child without giving it any medicine, save the iodide present in its mother's milk. After ten days trial, however, the child derived no benefit, and it was found necessary to have recourse to the usual mercurial practice.

Guy's Hospital Reports, April, 1845, *p.* 130.

98.—*Treatment of Syphilis by Iodine.*—By DR. G. MAJ'SISOVICS, of Vienna. [Dr. Moj'sisovics, having long enjoyed a large share of practice in Vienna, where scrofulous and other diseases requiring the use of iodine are very prevalent, has had ample opportunities of administering this remedy in various forms and with variable success. He enumerates thirteen preparations of iodine. In its pure state, and in the form of tincture, he objects to it on account of its insolubility; this objection to its use is overcome by combining it with the iodide of potassium, which he considers by far the best of its preparations.]

The dose usually recommended, merely for increasing the power of the absorbent vessels, is a half grain of iodine, with two or three grains of iodate of potassium, in a considerable quantity of water taken before dinner. In syphilis and scrofulosis, larger doses may be given: an infant, for instance, had five grains, and a child, six years old, began with half a scruple, increasing three grains every fourth day, up to half a drachm. At the age of fifteen, the dose at which we may commence is a scruple, gradually increased to a drachm, even to two.

The effects of saturation with the remedy are described as the exanthema iodicum, which shows itself in dark red definite spots of various sizes, spreading over the whole body, remaining without the formation of scales, and disappearing only after a long time.

[Iodide of mercury, from the facility with which it undergoes decomposition, and its liability to produce inflammation of the stomach and bowels, is seldom used internally, but]

In the form of ointment, it is exceedingly useful in promoting absorption; the strength recommended by the author is, gr. x to ʒij, (that of the London Pharmacopœia is, gr. xv to ʒij,) which quantity is to be daily rubbed into the part affected. The biniodide of mercury is also but little used internally, it is, however, an excellent external application, in the strength of ʒj to half an ounce of simple ointment, rubbed in three times a day. (The strength of the preparation in the London Pharmacopœia is, ʒj to ℥j.)

The action of this ointment, applied as a plaster spread upon leather, is the following: In the space of half an hour, varying according to the spot where it is applied, or according to the individual constitution, burning pain comes on, which in some persons lasts two or three hours, but in very sensitive subjects even longer. In the third hour the cuticle begins to shrivel, and then rises in little vesicles filled with transparent fluid. They increase in size, and form at length a single bladder, and the fluid becomes opaque. On the second day, the raised epidermis is thicker, the quantity of fluid lessened, and upon the third day the thick and solid epidermis separates in the form of a yellowish white crust. When this has fallen off, the part underneath is seen to be already covered with new epidermis, and entirely healed, but slightly red and sensible. This is the course when the bladder is not opened; when it has been torn, the part becomes painful, and discharges pus for a long time. After three days have elapsed, the application may be made again. The patient may be allowed to walk about during the painful stage, if it be not applied upon the perineum or the lower extremities.

In bronchocele its powerful effect may be mathematically shown, if the tumour is measured before the application of the plaster; for upon the falling off of the dried cuticle the size is found to have diminished sensibly. In this disease no preparation of iodine is comparable with the biniodide of mercury. It performs in one month what the other forms will scarcely do in three or four. I have treated goitres of enormous size with this medicine, and at the first application all the threatenings of suffocation or apoplexy (when they existed) ceased. Soft or so called lymphatic tumours of the thyroid body can be entirely cured, whatever is their size. Those which are indurated, as well as endemic goitres, are harder to cure than those which are soft, and those which occur sporadically.

Condylomata about the anus and perineum, or even within the rectum and vagina, are cured by this ointment; and unless they are exceedingly extensive and indurated, a single application, although very painful, combined with the internal use of iodine, has been found sufficient. The ioduretted syrup of iron was not found so useful as was expected, for children always refused to take it after a few doses.

British and Foreign Medical Review, April, 1845, *p.* 518.

99.—*On Tapping the Membranes of the Brain in Chronic Hydrocephalus.*—By Sir JOHN FIFE. [Sir John Fife publishes a case of chronic hydrocephalus in a child 17 months old, in which he tapped the membranes of the brain. The child's countenance was pale and clear, but otherwise healthy.]

When three months old, it appears to have had acute hydrocephalus; it however recovered, and since that, to all appearance has enjoyed comparative health, except that the head has continued to increase in size; has had calomel and other medicine without affecting it. The child has got four teeth, can see well, and hear perhaps too acutely; the head is immensely large, twenty-six inches in circumference, ten from ear to ear over the occiput, thirteen from ear to ear over the vertex, fifteen from ear to ear over the forehead; the skull appears to be dilated pretty equally; the eyes slightly project; the upper part of the face at the orbits is broadened; at the base of the nose it is completely blue from the collection of veins which are placed there, and issue out over the forehead; the other parts of the skull are also traversed by numerous tortuous and enlarged veins. The child seems as intelligent as others at the same age.

Operation. Sir John Fife placed the child on the knee of a nurse, its head in a line with the spine, which was half recumbent; he then with a small trocar penetrated the membrane in the coronal suture on the left side, half way between the longitudinal suture and the temporal bone. After passing the trocar somewhat less than two inches, the stilette was withdrawn, followed by fourteen ounces of fluid, the first twelve of which were perfectly limpid, the last two bloody. Compression by the hands of assistants was carefully made on the head, and maintained afterwards by adhesive straps and a long bandage, a little dry lint being applied to the wound. In an hour after the operation the child looked rather pale, but otherwise appeared the same, and was sucking vigorously its mother's breast.

[A week after the operation the child seemed rather stupid, but with this exception the case went on well, merely requiring castor oil to keep the bowels in a free state. On the ninth day a bandage was applied round the head.]

Provincial Medical and Surgical Journal, Nov. 27, 1844, *p.* 546.

100.—*Treatment of Hydrocephalus by the Starched Bandage.* [Dr. Schorrenberg publishes three cases of congenital hydrocephalus which he treated by the starched bandage; two of the little patients were cured, the third died seventeen hours after operation.]

Encyclographie des Sciences Medicales, Jan. 1845, *p.* 186.

101.—ON PERFORATION OF THE WALL OF THE CHEST INTO A TUBERCULAR CAVITY IN PHTHISIS.

By Edward O. Hocken, M.D., Physician to the Blenheim-Street Dispensary.

[Dr. Hocken's attention was some months since directed to the propriety and safety of making a free communication through the wall of the chest with a tubercular cavern in the lung, as a means of affording relief or of effecting a cure. The operation is by no means new, having been performed by Dr. Barry, of Dublin, more than a century ago. Dr. Hocken, however, thinks that, even in those cases to which it is adapted, it will fail unless medical treatment, capable of assisting the curative efforts of nature, and of suspending the further deposition of tubercle, be employed; which ends, he believes, may be gained by the use of *medicinal naphtha.**

The mode in which he thinks the operation proves beneficial is by freely opening sinuses, so as to allow the purulent matter free exit, hence he concluded it would be most applicable to cases in which abundant liquid contents are present, and also that it should be made at the most depending position, and at the nearest point to the surface.

Early in November, Dr. H. was informed by Dr. Hastings that he had a patient with a large cavity in the left lung, whilst the signs of tubercular disease were slight on the right side. On the 15th, Dr. Hocken auscultated the patient's chest a second time, and selected (agreeably also to the opinions of Dr. Hastings and Mr. Storks) a spot parallel with the left nipple, at the upper edge of the fourth rib, on a level with, but considerably to the left of the situation of the heart. The operation was then performed by Mr. Storks.]

My diagnosis of the case previous to the operation was—a very large empty cavern in the upper part of the left lung—probably occupying the whole of the upper lobe—extending very superficially, especially in front, and evidently in free communication with one or more bronchi: lower portions of the inferior lobe healthy. Some tubercular disease of the upper part of the right lung.

The changes which had been effected between the dates of Nov. 11th and Dec. 17th, were, that the cavity was retained in a state of comparative repose, the walls being no longer powerfully and constantly separated by each inspiration, whilst the little air which was drawn in by a forced inspiration, as in coughing, &c., readily escaped through the tube. From this favourable state of things the size of the cavity had evidently much diminished, (perhaps from the gradual approximation of its walls) and I have little doubt that a process of healing was in progress within the cavity itself: proved, I think, by the adhesions which constantly took place during the progress of the case, between the tube (which passed about an inch and a half into the cavity) and the soft parts with which it was in contact. During the dressing of the wound some small masses of organised lymph were several times withdrawn in the extremity of the gum-elastic tube, which had partially obstructed the instrument by stretching across its calibre, between the apertures in its sides. The quiescent state of the cavern, and the diminution of its size, which had evidently taken place, both by approximations of its walls, and a process of healing, fully account for the removal of pectoriloquy, and the great changes effected in the characters of the cavernous respiration. The slight disease present in the right lung was also diminishing and in process of cure. One gentleman, who has auscultated the patient twice during the last three weeks, imagined the disease of the right lung was increasing; but on what grounds I am at a loss to conceive. My own examinations of the patient's chest have been made with the greatest care, and coincide fully with the opinion of all those who have similarly examined the patient, with this one exception.

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* Till recently, says Dr. H., I feel convinced that scarcely any one has tried the *genuine Medicinal Naphtha*—it being impossible to obtain it (or only as an accident) from any house in London, but at White's, Piccadilly, two doors from the Haymarket. Very recently, Mr. Hooper, of 7, Pall Mall East, has succeeded in discovering where he can obtain a supply. He informed me that, but for an accidental circumstance, he would have searched London over without discovering any druggist who sold the right spirit.

The highly satisfactory state of the general symptoms attest the beneficial changes which have been effected in the local disease; I would especially refer to the number of the respirations in a minute before the operation (32) and subsequently, being at present from 16 to 18 in the minute; also the complete absence of dyspnœa and hectic; and the comparative freedom from cough, as well as from anything but simple mucous expectoration in small quantity; and no discharge, or very trifling, through the tube from the cavity. The pulse also has regained its healthy standard.

These are not the symptoms of advancing disease, but rather those resulting from a complete relief of the constitutional and local irritation, which had previously worn down the system, and were hurrying the patient to the grave. So far from any proof of advancing disease, the chest symptoms become daily more favourable, and the patient gains flesh, health, and strength. These remarks lead me naturally to speak of the

Manner in which the operation proves beneficial.—I have already mentioned the manner in which I believed the operation would act beneficially, before I attended the case of J. G.; since that time, however, my views have undergone some modifications, which I think of considerable importance in practice. My former opinion was, that the great objects of the operation were to allow the secretions of the cavern to escape freely, and thus to prevent any accumulation in the diseased lung, and give relief to that irritation which is produced by the passage of such matters through narrow and circuitous routes. Hence I imagined the opening ought to be made in the most depending position.

My present belief is, that when a free communication is formed with a cavern through the wall of the chest, a new action is produced in the sides of the cavity, of a healthy and reparative nature—totally opposed to the diseased conditions which previously existed, and which tended only to the increase of the complaint, and to the death of the patient. The presence of the previously unhealthy action in the cavern is manifested in the severe local and constitutional irritation which exists: producing in the first instance cough, more or less unhealthy muco-purulent secretion, (which in the case of J. G. was expectorated as fast as it was formed, amounting to about ℥iij. daily), constant dyspnœa and breathlessness, with a necessity for frequent respiration; in the second giving rise to a state of severe hectic, rapidity of pulse, great emaciation, and complete loss of strength, &c. Consumptive patients rarely die from the actual amount of disease present not leaving a sufficiency of lung to carry on life, but from the amount of irritation which that disease occasions, wearing down the vital resistance, and hurrying the patient to an untimely grave. As soon as the operation is performed on a judiciously selected patient, this state of irritation, which, in the stage of cavern, is the *fons et origo mali*, is removed, the cough, dyspnœa, expectoration, and frequent respiration are relieved, and altered in character—for the cavern either secretes nothing, or mucus in very diminished quantities. In like manner also the constitutional symptoms: the pulse falls to its healthy standard; the hectic disappears, and as the patient recovers from the immediate effects of the operation (unless any accidental circumstance keep him back), he gains flesh, appetite, and strength, with a due performance of the functions, and with the feelings of health.

The manner in which this healthy action is induced in the cavern by making an opening into it through the wall of the chest, may probably be explained on the same principle that accounts for the cure of some forms of laryngeal disease acute or chronic. As long as the larynx performs its functions in respiration it forms a highly important part in the economy, and is more or less constantly disturbed by the ingress or egress of air. If under these circumstances disease be set up in the organ, there is that amount of irritation present which will prove sufficient to keep up and increase it—so as generally to set medicine at defiance—and ultimately, either in a very short or a longer period, prove the cause of death, or be cured by the operation of tracheotomy. By this operation the larynx is cut off from performing any important office in the economy, and is placed in a state of quiet; inducing immediately a complete change in the character of its diseases, which become as curable and as unimportant as a similar disease would be in the mouth, or in any other non-vital part of the body. So, in like manner, the tubercular disease in phthisis is situated in a vital organ of the highest importance, and the cavern is subject to constant disturbance in the respiratory movements, and from the ingress and egress of air. By making a free opening into any part of this cavern through the wall of the chest, it is cut off from performing any part of the respiratory functions; its sympathetic relations with the rest of the system are completely altered (having just the same amount of sympathetic relation with the constitution as such disease would have if situated in a non-vital part), the diseased parts are placed in a state of comparative rest, and the tubercular cavity becomes as curable as it would be if situated in any part of little importance in the economy.

Medical Gazette, Jan. 10, 1845, *p.* 481.

102.—*New Trocar for the Operation of Paracentesis Thoracis.* [Dr. Fletcher exhibited at the January meeting of the Birmingham

Pathological Society a trocar and canula, which he had constructed to prevent influx of air into the chest during the operation of paracentesis thoracis.]

It consisted of the following modification of the common trocar and canula. The canula is lengthened beyond the shoulder three quarters of an inch, and of course the trocar is so much longer than in the common instrument. To this lengthened-out portion of the canula is to be attached a piece of intestine of some small animal, which is pulled out as the trocar is withdrawn, and hangs down about three quarters of an inch. The trocar is passed along the canal of the intestine into the canula, and the loose portion is doubled up upon the shoulder of the trocar when the instrument is prepared for the operation.

Dr. Fletcher said, that he thought this modification of the instrument would be useful in all cases; by including the lengthened-out portion of the canula in the grasp of the operator, the handle was somewhat lengthened, and the trocar and canula being held together, a greater degree of firmness would be attained. The lengthened-out portion allows much greater facility for catching the fluid as it runs from the canula than in the common form of the instrument; and the intestine permits the operator to check with very great ease the rapidity of the discharge of the fluid, which is sometimes very necessary in the operation of paracentesis abdominis.

Provincial Medical and Surgical Journal, March 19th, 1845, *p.* 184.

103.—ON THE PULSATING TUMOURS OF BONE.

By Edward Stanley, Esq , F.R.S., &c. &c.

[Mr. Stanley remarks that there are three distinct sources of pulsation in the tumours of bone:—1. The proximity of the tumour to a large artery ; 2. The development of blood-vessels and blood-cells, constituting a sort of erectile tissue within the tumour; 3. The enlargement of the arteries of the bone in which the tumour has arisen. Of these, the first is by far the most common. The tumour generally consists of soft fibrous and dense osseous tissue. Such cases have frequently been mistaken for aneurism, and the principal artery supplying the part has in consequence been tied.

On the subject of pulsation in the tumours of bone dependent on the development of blood-vessels and blood-cells, forming a sort of erectile tissue within the tumour. Mr. Stanley remarks, that, assuming these cells to have been continuous with the surrounding arteries, the rush of blood into this structure might give to the whole mass a pulsation resembling that of aneurism.

Several cases of the third variety are referred to. The density and resistance of the investments of the tumour are specially noticed by the author as appearing to have a material influence in causing pulsation in them, for it may be doubted whether any of these tumours would pulsate without the resistance derived from the bone or its coverings.]

After some observations tending to show the little value to be attached to the presence of bellows-sound in the diagnosis between aneurism and the pulsating tumor of bone, Mr. S. proceeds to relate the case of pulsating tumor of the ilium which has recently occurred in St. Bartholomew's Hospital, in which a ligature was placed around the common iliac artery. The patient, a man, aged 42, had on the inner side of the right upper arm, a tumor about the size of a small orange, very loosely connected with the surrounding structures, free from pain, and without pulsation. This tumor was first observed about ten years ago, and during the last three years it had ceased to grow. The pulsating tumor of the pelvis had its chief attachment to the left ilium, and projected from both surfaces of the bone. It reached downwards to Poupart's ligament, and to the extent of about three inches into the abdomen. It felt moderately firm, and a little below the crista, near the anterior superior spine, a small moveable piece of bone was discovered apparently involved in the tumor. Everywhere within reach of the fingers the tumor pulsated, not with a thrill of vibration, but with the deep heavy beat of aneurism. By the ear resting against the abdominal parietes, a bellows-sound was plainly recognised. After a minute description of the local features and constitutional phenomena of the disease, the author observes, that in deciding on the nature and treatment of the case, the following points were involved—was this pulsating tumor an aneurism? and if so, from what artery had it arisen; or was it one of the pulsating tumors of bone? He then states the arguments which, in consultation, led to a preponderance of opinion in favour of this tumor being an aneurism. In the uncertainty respecting the origin of the supposed aneurism from the external or internal iliac artery, the decision would obviously be that the common iliac should be tied, and the man having decidedly expressed his feeling in favour of submitting to the operation, the author considered it his duty to undertake it. The operation was performed on Monday, the 27th of January. The case proceeded favourably to the middle of the second day, when symptoms of peritonitis ensued, and he sunk on the morning of the third day from the operation. On examining the body, the effects of peritonitis were observed in the deeper parts and left side of the abdomen. In the wall of the left ventricle of the heart there was a medullary tumor about the size of a filbert. Medullary matter was found in the bronchial glands, and a few deposits of the same kind in the lungs. A minute description is given of the tumor in the pelvis, which was connected with the ilium, and composed of a spongy tissue with cells and convoluted vessels distributed through it. The tumor in the arm, which had all the marks of an innocent structure, was found, to the surprise of the author, identical in structure with the tumor in the pelvis.

Medical Gazette, March 21, 1845, *p* 806.

Notwithstanding its density, says M. Roux, the osseous structure may become the seat of a transformation similar to that which, in the soft parts, constitutes sanguineous (erectile) tumours. The capillary vessels, more especially those which depend on the arterial system, become extraordinarily developed. Perhaps when they are thus amplified, the network which they form naturally may assume a different arrangement; perhaps the capillaries are differently interlaced, anastomosed. However this may be, as these capillaries become dilated and filled with blood, the bone softens, swells, and probably there is destruction of the proper fibres of the thin lamellæ which constitute its substance. At last, the disease progresses to such an extent that the external lamellæ of the bone, even those formed by the compact tissue, are reduced to a kind of thin, flexible, envelope, through which the pulsations of the tumour may be felt, and which rupturing divides into little fragments, or disappears entirely. This state of the osseous substance may be compared to aneurism; it is, indeed, an aneurismal state of the capillary system of the bone. The flat bones, which have a well-marked diploic structure, such as those of the skull and pelvis, and the spongy portion of the long bones, are the most liable to the disease. The immediate cause is nearly always a blow. As is the case in the soft tissues, sanguineous fungous tumours of bone are not always benignant; they may be endowed with a force of expansion and a rapidity of growth, which alone would render them extremely formidable, and present, on anatomical inspection, the most heterogeneous structure; or the cancerous element may manifestly be superadded. When this is the case, these tumours appproximate very closely to the degenerescences of the osseous structure, known under the name of spina ventosa or osteosarcoma. These latter appear to be merely different forms of cancer of bone, a disease which has been but imperfectly described hitherto, and which it will, perhaps, be ever impossible to delineate with precision, so great are the anomalies which it is susceptible of presenting. These tumours are so rare, that M. Roux has only seen a few well-marked cases during his long surgical career.

The only methods of treatment which can be adopted with any chance of success are—the ablation of the tumour along with the part of the bone which is diseased; the amputation of the entire part or organ affected; and, lastly, the ligature of the principal artery of the diseased region.

[This communication is of considerable interest, from its bearing directly on the late discussion on Mr. Stanley's paper, which we have just given.]

Lancet, April 5, 1845, *p.* 373.

[Dr. Topham communicates a case of this description, which occurred in the practice of M. Nélaton, of Paris. Three months before, an enlargement in the vicinity of the right knee-joint appeared, unattended with pain, the tumour gradually increased, and]

There is now an enlargement occupying the situation of the internal condyle of the right femur. The dimensions of this tumour are six centimetres in the transverse direction, and about eight centimetres as measured from before backwards. The exact limits to which the disease extends are difficult to define, as at its upper portion only is there a salient edge perceptible. The swelling occupies much more of the anterior than of the posterior portion of the limb.

The general surface of the tumour offers a hard resisting surface to the hand of the surgeon, it being evidently formed of an osseous shell; but over the internal condyle of the femur, precisely in the situation in which the patient describes the disease as having commenced, there is a point which offers a less degree of resistance to pressure, and in which the bony tissue appears to have become absorbed. This point is the only one in which pressure occasions pain to the patient, the rest of the surface of the tumour possessing no preternatural degree of sensibility. No pain is complained of in the thigh or leg, nor does pressure made over the course of the crural vessels occasion any abnormal sensation.

On placing the hand upon the tumour, a distinct pulsation is perceived, synchronous with each beat of the femoral artery. The swelling at the same time is felt to increase in size, especially in that situation in which there is naturally the least resistance.

Pressure made upon the femoral artery occasions the immediate cessation of this pulsatory motion in the tumour, and this occurs equally, whether the pressure be made in the upper or in the middle third of the thigh. Coincidently with the stoppage of the pulsation, the tumour is felt to become soft, and to sink down to a certain extent under the hand in the situation in which there is least resistance in the parietes.

On applying the ear to the swelling, (the femoral artery being free,), a slight sound is heard synchronous with the arterial pulsations, but this is in no way comparable with the *bruit* heard in an ordinary aneurism, and is so slight as to be with difficulty distinguishable.

M. Nélaton determined upon placing a ligature upon the femoral artery, in the hope of thus arresting the progress of the tumour. The vessel was accordingly tied in the middle portion of its course, this situation being selected because it had been previously found that pressure made on this part of the artery commanded the flow of blood into the tumour as completely as when excited upon the vessel in the upper third of the thigh; and because, in case of secondary hæmorrhage, the operation of Scarpa would still remain practicable. The operation was performed on the 10th of March.

The immediate result of this procedure was to cause the disappearance of all pulsation in the morbid structure, but at the end of seven days this phenomenon again made its appearance, so that the result of the operation has been unsuccessful.

I may remark, in conclusion, that in the case just described, are combined all the characters mentioned by authors as appertaining to this peculiar affection, with the exception of *one*.

M. Lallemand, of Montpellier, describes a sensation of *crackling* to be perceptible to the finger when pressure is made upon the tumour. This is due to the breaking down of minute osseous septa which exist in the substance of the morbid mass. The noise produced has been compared to the "crumpling" of parchment. The above phenomenon also presented itself in a case treated by M. Roux. In the present instance, however, nothing of this nature was perceptible either to the surgeon or to the patient.

Lancet, April 12, 1845, *p.* 407.

104.—*Ulcerated Pile treated with Chromic Acid.*—By ALEXANDER URE, Esq. J. L., aged 31, tailor, admitted April 27th, 1844. At the verge of anus is a dark hemorrhoidal tumour, the bigness of half a walnut, of which the surface is ulcerated and extremely painful. The tumour had been extruded several days, and various attempts at reduction proved of no avail. The patient seemed in a most deplorable state, haggard, and worn out by suffering, from which he could only obtain a brief respite by observing a half-bent posture. He had been subject to piles for some years. The bowels were open. I applied the chromic acid freely over the whole of the diseased surface.

[The application occasioned much uneasiness for some hours. A considerable slough came away, and the excrescence shrunk to a small size, and became quite insensible. The bowels at first were torpid, and his appetite bad, but these soon yielded to epsom salts with infus. gentian, and in about a fortnight he was perfectly cured.]

Chromic acid is, as every chemist knows, a most powerful oxidizing agent, yielding half its oxygen readily to organic substances, and being reduced to sesquioxide. On this principle, I was led to employ it as an escharotic. It is exceedingly convenient for application, inasmuch as it consists of a thick crystalline pap, which, when rightly managed, does not spread beyond the prescribed limits; and so soon as its erosive operation is finished, passes into the state of inert pulverulent sesquioxide above mentioned.

My colleague, Dr. Child, of Mortimer Street, requested me, on the 30th of May, 1844, to see Mrs. W., aged 30. For a month previously she had been suffering much from two hæmorrhoids situate upon the right side of the verge of the anus, each about the size of a kidney bean, and was anxious to obtain alleviation. Various external and internal means had been already employed, but in vain. She had been troubled with piles at different times during the preceding eight years. Her general health is tolerably good, and the bowels usually regular. Since her last confinement, ten weeks ago, she has complained of shooting darting pain referred to the anus. It was determined to apply chromic acid, which was accordingly done. It was found necessary to repeat the application on the first of June. This caused acute burning pain both times, destruction to a considerable amount of the diseased texture, consolidation of the remainder, and permanent relief from the distressing ailment.

Medical Gazette, March 21*st*, 1845, *p*. 787.

105.—*Hæmorrhoid Needle.* [Mr. G. B. Childs, Surgeon to the City Police Force, has invented an instrument for the application of ligatures to small tumors of the vagina and rectum.

Practitioners are well acquainted with the difficulty that often exists in getting the ligature to remain close around the base of the hæmorrhoidal tumors, particularly when these are not very prominent, and crowded together.]

The ordinary mode of proceeding in such cases is to pass the ligature around the tumor, with the right and left index fingers, either aided by a tenaculum or not, as the operator may deem expedient: with the utmost precaution it sometimes occurs that our endeavours to complete the operation are embarrassed by the constant slipping of the ligature; or, what is still worse, the operation may prove unsuccessful, from the ligature embracing a portion only of the hæmorrhoid.

Such accidents are less likely to occur when the hæmorrhoid needle is resorted to, for it enables the operator with great facility to keep the silk in close contact with the base of the tumor, and when two or three are close together, and are situated high up the rectum, the ligature is readily passed between them.

Mr. Childs' instrument is of a very simple construction, and in shape is somewhat similar to a button-hook: on its under surface is a groove for the reception of the silk, which latter must be well waxed before it is used; at each extremity is a slit or notch for the purpose of nipping the silk and retaining it in its proper situation.

The operator carries the needle, previously threaded, behind the tumor, and with the handle slightly raised, in order that the groove may be brought to bear upon its base, he gives it to an assistant to hold, directing him to keep a steady and firm pressure downwards and outwards: the operation is then completed in the ordinary way; the ligature as it is tied releasing itself from the groove of the needle.

A modification of the same instrument might be advantageously resorted to for the removal of polypi and other tumors of the uterus.*

Medical Gazette, April 18, 1845, *p*. 925.

106.—*On the Detection of Needles, &c., imbedded in the body.*—By Alfred Smee, F.R.S., &c. [Portions of iron or steel are extremely liable to be introduced into the body, frequently proving very injurious. There are means however by which their presence may be readily determined. Mr. Smee, after some remarks on a case which came under his care, where a needle was introduced into one of the joints of the finger, and caused suppuration and subsequent anchylosis, which might have been prevented could it have been shown that the needle was actually present, and its exact spot demonstrated, says,]

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* The needle is made by Mr. Fergusson, of West Smithfield.

You are all acquainted with the curious condition which steel assumes under certain circumstances, whereby it evinces properties which are called magnetic; you know, moreover, that magnetic poles repel, and opposite attract, each other. You have, therefore, but to render a piece of enclosed steel, a magnet, and you will be able not only to ascertain its presence, but to determine by its polarity, its general direction; and by the amount of magnetism it evinces, you may even infer its probable bulk.

When you suspect the presence of a piece of needle, or other steel instrument, you must subject the suspected part to a treatment calculated to render the needle magnetic; and there are two principal methods by which this object may be effected. The first, by transmitting a galvanic current, at right angles, to the suspected part; the second, by placing a large magnet near the part affected, so that the object may be magnetized by induction. You may accomplish the first end, by taking a copper wire, covered with cotton, or still better with silk (in fact, you may employ the covered wire as generally used for the formation of electro-magnets), and wind it round the parts suspected to contain steel, several times, so that the same current may act at right angles, many times, upon the piece of steel; you may then take a galvanic battery (one of my little tumbler batteries will amply suffice,) and connect one end of the wire to the zinc, the other to the platinized silver. The current might be continued for half an hour, or more, when the steel would become magnetized, and, thereby, give strong indications of its presence.

For my own part, I should use the second plan, or the plan of magnetizing by induction, to render the needle magnetic. For this purpose, I have employed a temporary electro-magnet, which I magnetized by the voltaic battery, and you will find, that by keeping the part affected as close as possible to the instrument, for about half an hour, you will sufficiently obtain the desired object.

To test the existence of a magnet within the body, we may take a magnetized sewing needle, and suspend it by a piece of silkworm's silk, when it will exhibit certain phenomena upon the approach of the suspected part, provided it contain a piece of magnetized steel. Although this simple contrivance will amply suffice, I, myself, possess a needle, which was made for me by Messrs. Willats, of Cheapside, and which is well adapted for the purpose.

It consists of a delicate needle, about six inches long, centred upon a small agate cup, resting upon a steel point, so that the smallest possible amount of resistance is offered to its free play.

When a part, containing magnetic steel, is brought near the needle, it may be attracted, or repelled, it may move upwards or downwards, or it may exhibit disquietude according to the position in which the new magnet is held. We may detect the position of the foreign body, when it is of any size, by ascertaining where its north and south poles lie, and these are determined by their repelling and attracting the opposite poles of the magnetic needle. The disquietude, or motion upwards and downwards, merely indicates magnetism, but not the direction of the magnet.

You will doubtless be surprised when I tell you, that, in this manner, I have detected a piece of needle impacted in the finger of a young woman, although it weighed but the seventh of a grain. This gave such marked indications, that I found out tolerably well the position of its north and south poles, though I could not ascertain the presence of a foreign body in any other way. I tried experiments on smaller pieces, at short distances, such as half an inch to an inch, and I found that a piece of needle, weighing 1-60th of a grain, gave decided indications after having been magnetized, and, perhaps, even a still smaller amount of steel might in some cases be detected.

Medical Times, Dec. 14, 1844, *p.* 224.

107.—*On the Proper Mode of Applying the Tourniquet.*—By Robert Liston, Esq., F.R.S. When you first put on the tourniquet, no pressure must be made on the vessels; the surgeon must be ready to make his incision before it is screwed up; for if you allow it to remain on a minute or two, the whole limb is gorged with blood. If you are desirous that the patient should not lose blood, it is of the utmost moment to attend to this point. Put on the tourniquet; you may even allow the surgeon to transfix the limb with his knife; the instant the principal vessel is about to be divided, screw it up quickly, and again, as soon as the larger arteries are secured, take it off. If you go on screwing it up, look at the end of the vessels, then unscrew it; if you see something bleeding, try to catch the vessels, and then screw again; there is an immense quantity of blood lost, the veins pour it out as fast as the arteries, you do not know what you are tying, and you are almost certain to tie a great many vessels very unnecessarily.

Lancet, Jan. 4th, 1845, *p.* 5.

108.—*Periosteal Thickening Cured by Iodide of Potassium.* [Mr. Alexander Ure relates a case of periosteal inflammation of left ulna, about its middle third, of two months standing, which, after blisters, leeching, &c., had been tried, was cured by taking two grains of iodide potass. twice daily, in infus. gent. co., and a grain of opium at bedtime, for a fortnight; bran poultices applied to the arm.]

Medical Gazette, March 21*st,* 1845, *p.* 785.

109.—*Creosote in Nævus Maternus.* Dr. Thornton informs us that of all the applications he has tried against nævus, the most effectual is creosote. He had treated three cases in the course of the year successfully with this substance. It is applied two or three times daily, more or less diluted. Excoriation, ulceration, and gradual disappearance of the nævus ensues; the cicatrix had always been smooth and sound.

Northern Journal of Medicine, Dec., 1844, *p.* 119.

110.—*On Suffocation from a Body Lodged in the Larynx.*—By Charles James Campbell, Esq., Interne of the Sainte-Perine Hospital, Paris. [This case of suffocation is chiefly remarkable from the fact, that the epiglottis was evidently unable to fulfil its office perfectly, on account of "retraction of the glosso-epiglottic median ligament." The woman was threatened with suffocation twice before: the third time a piece of boiled beef was drawn into the larynx and destroyed her. Mr. Campbell describes the post-mortem examination as follows:—]

I then proceeded, with the greatest care, by a lateral dissection of the neck, to uncover the larynx, laying open the pharynx, after disarticulation of the inferior jaw-bone, thus leaving the tongue in its natural position and connexions. The epiglottis is closely applied to the root of the tongue, and behind the epiglottis the superior orifice of the larynx is discovered to be entirely filled up with a piece of boiled beef, the end of the morsel not being at all prominent above the edges of the superior opening of the larynx, in such a manner that at first sight it was impossible to ascertain the whole volume of the foreign body. This evidently was the cause of death. I then extracted the boiled beef—it formed a sort of a cork of compact meat, partially chewed, was about an inch long, and weighed a little more than a quarter of an ounce (eight grammes, eight decigrammes.) It must have reached, *in situ*, the cricoid cartilage.

The *epiglottis* was then carefully examined, and found to be rather less in its dimensions than usual. It not only left the posterior angle of the superior opening of the larynx uncovered in a comparatively too large extent, but we felt an unnatural resistance when we attempted to bring down this cartilage over the aperture. We remarked, that in so doing the median glosso-epiglottic ligament was so extended as to pull back and elongate those fibres of the root of the tongue to which it is adherent, and when let go, the epiglottis resumed its first position with more than its ordinary elasticity. Having removed the larynx and tongue, I kept them in water slightly alcoholized, for forty-eight hours; the epiglottis still retained that stiffness and insufficiency in its play, the tongue being placed in its natural relative position.

The anatomists and medical observers who have seen the parts agree with me in the opinion that this organic lesion, which consists either in *atrophy* or *retraction* of the median glosso-epiglottic ligament, has been the first cause of suffocation in this case, by giving a freer access to foreign bodies into the air-tube.

Lancet, Dec. 21*st*, 1844, *p.* 371.

111.—*On the Use of Chloride of Lime in Diseases attended with Contagious Discharge.*—By Dr. Radclyffe Hall. *Gonorrhœa.*—In the first stage, before the discharge has become completely puriform, or the scalding great, a single injection of about two fluid drachms of the strong solution will always put a stop to the disease, either in a first or subsequent clap. In the second stage, when there is a considerable discharge of pus, and more pain, several injections are required. In gleet, provided the discharge be not kept up by some structural change in the urethra, the strong injection is likewise useful, but not to so striking an extent. The effects of injecting the strong solution are, sharp pain, and often erection for the moment, slight puffiness and eversion of the orifice of the urethra, and tenderness on pressure, and a feeling of unusual firmness for two or three inches down the corpus spongiosum, where these did not already exist. In a short time, the pain subsides, and in a quarter or half an hour, a serous discharge issues from the mouth of the urethra.

Purulent Ophthalmia Dr. Hall has treated with like success. He thus uses the solution:—

The eyelids are slowly and gently separated until the cornea can be seen, when that is manageable, and all secretion is wiped away with a fine soft sponge. A large bushy camel-hair pencil, charged with the strong solution, is then insinuated beneath the upper eyelid and swept round the front of the eye; the pencil is again charged with the solution and applied to the everted lower lid. Unless plenty of fluid be thus applied, the application will be equally painful but less effectual. There is considerable pain, of a smarting, burning character, for half an hour or longer. and the already swollen eyelids become more tumid and prominent. This tumefaction is œdematous in character, the skin losing in some measure its peculiar redness, and becoming more transparent. In a few hours, a serous discharge oozes out from between the eyelids, and the swelling partially subsides. This is followed by secretion of matter, but after two or three applications of the chloride, in perceptibly diminished quantity, the discharge gradually loses its characteristic yellow colour, and is seen in flakes on opening the eyelids. After three or more applications, the eyelids no longer swell as they did after the first, and the pain is much less. The eyes are kept clean with warm water, matter never being suffered to collect beneath the upper lid; a little spermaceti ointment is smeared on the edges of the eyelids, and the strong solution is applied once in every twenty-four hours, until the secretion ceases to be in the least degree puriform. No other treatment whatever is necessary.

Lancet, Jan. 11*th*, 1845, *p.* 37.

112.—*On Obstruction of the Vena Cava.*—By Thomas Bevill Peacock. Esq., M.D. This was a case of complete obstruction of the inferior cava, from the uterine and common iliac veins to the entrance of those from the liver. The obstruction in the former vessels, and the inferior portion of the cava, was the result of the adherent masses of pale lymph, while above, the vessel was converted into a ligamentous cord. The right kidney was in an advanced stage of granular degeneration, the left completely atrophied; the liver was also of small size. The author considered the disease of the vein to have been wholly unconnected with the death of the patient, and ascribed the general dropsy under which she laboured during the last period of her life, to the condition of the kidney and liver. The circulation had been maintained by means of the branches of the vena azygos. The author was of opinion that the adhesions of the uterus to the adjacent organs, and the appearances of the veins, as exhibited in the preparations shewn to the Society, were conclusive of the dependence of the obstruction in the vein on inflammation of the vascular tunics.

[Dr. Budd remarked that sufficient attention had not been paid to the influence of adhesive phlebitis in producing atrophy of the glandular organs,]

He had seen instances in which both the liver and kidney had become atrophied to a great extent, from the presence of adhesive phlebitis in the portal and renal veins. He had seen the liver so atrophied as to be indented with deep fissures, and on examination it was found that the branches of the portal veins supplying the atrophied parts were completely obliterated, as the result of phlebitis. He had seen the same effects in the kidney from a like cause.

[Dr. C. J. B. Williams considers that the pathology of the veins is not sufficiently understood. He says,]

That many cases supposed to be phlebitis are not so in reality, but that the symptoms presented to us depended on an adherence of the fibrine of the blood, or of coagula, to the coats of vessels, which by the influence of previous disease had become roughened. If we reasoned by analogy, there was good ground to suppose the doctrine correct, for it was well known that the lining membrane of arteries become altered by old age, or some other cause, totally independent of inflammation.

[Mr. Fergusson infers from the fact of varicose veins of the lower extremities having been attempted to be obliterated by the passage of needles under and string over them, and where every sign of inflammation was present, yet in ten, twenty, or forty days, blood again flowed freely through the vessels, that adhesive inflammation of the lining membranes of veins was by no means common, nor easily set up.

Dr. Peacock does not agree with Dr. Budd, with respect to the influence of adhesive inflammation on atrophy of the glandular organs. In his own case he felt convinced that the glandular disease had preceded that in the veins. Besides, the liver in this instance was atrophied, whilst the portal system was healthy. The atrophy of the kidney on one side depended on granular degeneration, the enlargement of the other arose from the same cause in a less advanced stage. He considers that there were unequivocal proofs that the morbid appearances in the veins were the result of adhesive phlebitis.]

Medical Gazette, *Nov.* 22, 1844, *p.* 266.

113.—*Treatment of Psoriasis.* [Mr. Waddington, of Margate, states, that after a long experience in the treatment of psoriasis diffusa, or palmaria, he has found the best treatment to consist in the application of cocoa-nut oil, diluted with equal portions of ung. cetacei.]

The affected parts should be washed every night and morning with tepid *rain* water, then made quite dry, and the ointment applied lightly, (with a camel-hair brush;) over this, oiled silk should constantly be worn.

The pilul. hydr. sub. comp., (Plummer's pill,) gr. x., each night at bedtime, with liq. potassæ, m. xx., three times a day, are among the best *internal* means of treating psoriasis diffusa, joined with great care as regards regimen: no salted meats, no shell-fish, no fermented liquors, no acids; the less fruit and vegetables the better.*

Lancet, *Dec. 7th*, 1845, *p.* 316.

114.—*Creasote in Burns.*—By SIGISMUND SUTRO, M. D. [Dr. Sutro having witnessed the very valuable effects of creasote applied in cases of burns and scalds, recommends the following preparation to be kept ready under the name of "Burn Ointment."]

℞ Creasot. drachmam dimidiam; carbon. anim. præp. drachmam; spir. vin. drachmam et dimidiam; ung. spermacet. unciam et dimidiam; m. ft. ung. for adults.

This might be modified, according to age, in the following manner:—For children under five years, the ointment should be weakened by mixing it with four times its bulk of spermaceti; for children from five to ten years, with twice its bulk of spermaceti; and so on, gradually increasing the strength of the ointment, according to the age of the patient. In cases requiring protracted treatment, the dose of creasote should be gradually and carefully increased, in the successive applications.

Medical Times, *Jan. 4th*, 1845, *p.* 314.

115.—*Combination of Copaiba with Purgatives in Gonorrhœa.* From an account given by M. Jacquetant of the Hospital practice of M. Diday, it would seem that the balsam of copaiba acts much more energetically in the removal of gonorrhœa if combined with purgatives. The formula which M. Diday found most successful, was three drachms of the balsam of copaiba, four drachms and a half of the powder of cubebs, and forty-five grains of the powder

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[**Query*.—Does Mr. W. mean that he gives 10 grain doses of Plummer's pill *every night?*]

of jalap, made into an electuary, of which one-half is taken in the morning and the remainder in the evening. The treatment rarely lasted more than five days, by which time a permanent cure was in general effected.—*Gazette Médicale de Paris, and Edinburgh Medical and Surgical Journal.*

Provincial Medical and Surgical Journal, April 30, *p* 287.

116.—*Treatment of Bed-Sores.* Dr. Graves (Clin. Med., p. 136) recommends a nutritious diet, wine, and the sulphate of quinine. The sores to be washed night and morning with a solution of chloride of soda, in the proportion of 20 or 30 drops to an ounce of water. A liniment composed of two ounces of castor-oil and one of balsam of Peru is to be applied on pledgets of linen, and covered with a poultice of linseed meal two or three times a-day.

A writer in the Medico-Chirurgical Review recommends as a prophylactic a solution of creasote, one part in 80 of water; if the skin should break, the zinc or lead ointment to which camphor has been added; and in still more obstinate cases, an ointment composed of four parts of fresh prepared tannate of lead and 30 of lard. A writer in Walther and Ammon's Journal recommends a lotion composed of equal parts of spirits of camphor and Goulard-water.

Northern Journal of Medicine, Dec. 1844, *p.* 121.

117.—*On the Treatment of Erysipelas.* By Professor Velpeau. Numerous clinical facts prove, that the sulphate of iron is one of the most efficacious topical remedies in erysipelas. This substance may be employed in solution, or as an ointment; Professor Velpeau prefers the former, and has recourse to the latter only when it is impossible to apply compresses, soaked in the liquid, on the seat of the disease. The proportions of the solution are:—℞ Sulphat. ferri ℥j., aquæ puræ j. lb. m. ft. lotio parti dolenti secunda vel. tertia q. q. hora applicanda;—or, ℞ Sulph. ferri ʒiiss., adipis præp. ℥j.—ʒx. M. ft. unguentum parti dolenti secunda vel. tertia q. q. hora applicand. When these topical remedies are had recourse to, the erysipelas generally yields in the space of twenty-four hours; the skin becomes less tense, and loses its shining aspect; the epidermis is drawn into small folds, and cracks; the tumefaction decreases; the pain and the heat disappear. Prof. V. insists particularly upon not confounding this disease with angioleucitis, diffused phlegmon, cellular phlebitis, and erythema, as it is doubtful whether the ferruginous application is useful in these disorders. Erysipelas is characterised by a diffused inflammation, without any notable swelling of the sub-cutaneous tissues, extending gradually from one part to another, the edges of the inflamed spot being as red as its centre, and slightly elevated and festooned; the skin, a line beyond this edge, appears to be normal,—whereas, a line within, it is as inflamed as in the centre of the affected part. According to Professor V., this *festooned edge* is the pathognonomic sign of erysipelas. Finally, should the disorder appear to be produced by some internal cause, we must first direct our remedies against this, the sulphate of iron being only really efficacious, when the inflammation is purely local.—(*Bulletin de Therapeutique.*)

Medical Times, Dec. 7th, 1844, *p.* 213.

118.—ACUPUNCTURE IN PROTRACTED LOCK-JAW

By WILLIAM SELLER, Esq , M.D., Lecturer on Materia Medica, &c

[The patient, 25 years of age, unmarried, had for years been subject to attacks of suppurating sore throat, in which the jaw often became nearly immoveable for two or three days before the discharge of the matter. In 1826 she had a severe attack, from which resulted complete lock-jaw, accompanied with hysterical symptoms; which attack yielded after six weeks of treatment so far that she could put a teaspoon into her mouth. After nearly a year the jaw again became completely fixed, without accompanying sore-throat, and the same treatment, with galvanism, was tried without effect.

Although unequivocally connected with hysteria, there was reason to think, from the inflammatory symptoms with which the disease set in, that the affection was not purely spasmodic, but was kept up by rigidity of the muscles closing the jaw, produced by inflammation, in consequence of which the antagonist muscles had become inadequate to the effort of opening the mouth, under the mere influence of volition.]

It was this view of the case which made me consider it more reasonable, in making trial of the needles, to insert them into the muscles which open the jaw, in the expectation of exciting these to such a contraction as might overcome the rigidity of their antagonists. My intention was, as a first experiment, to introduce two needles, one on each side of the mesial line, between the chin and the hyoid bone; but as the patient showed signs of alarm at the place chosen, the first needle was inserted close to the anterior border of the sterno-mastoid muscle, immediately behind the ramus of the jaw, as near as I could judge to the course of the digastric muscle. The needle had not penetrated much beyond the integuments; when to my surprise (for I had not great faith in the remedy), the teeth began to grate on each other, and the jaw to be drawn forcibly, by short convulsive efforts, to the side where the needle was inserted. I made haste to introduce another needle into the corresponding part on the opposite side; and now the jaw was drawn from side to side, not by single alternate contractions, but by several convulsive movements on one side, followed by a nearly equal number towards the other side, interrupted occasionally by a momentary opening of the mouth, to the extent of about two fingers' breadth. This momentary opening of the mouth appeared to take place only when the last convulsive movement on the one side, coincided with the commencement of a new series of such movements on the other side.

When things had gone on in this manner for about one minute, the grating of the teeth grew more violent, while the lateral motion became less extensive than before; and this change was accompanied with an evident hardening of the masseter and temporal muscles, indicating that a reaction in these had arisen. The needles were immediately withdrawn—yet the same convulsive movement upwards continued. I introduced my thumbs, one on each side, between the jaws, where the teeth had been extracted, and was able, with some difficulty, to keep the teeth nearly free from each other, by pressing down the jaw. Even after this upward movement set in, an occasional temporary opening of the mouth took place, followed by a renewal of the upward motion.

About five minutes after the needles had been inserted, or about four minutes after they were withdrawn, the convulsion ceased. But in five or six minutes it was renewed, yet not with the same violence, nor was it of so long duration.

During the convulsion, more particularly in the latter part of it, when the upward movement prevailed, the patient suffered an increase of pain in the temples, and in the regions of the masseter muscles, which continued for some hours. In the joint itself there was no pain.

After this first trial of the needles, the patient could move the jaw from side to side with tolerable freedom, and open her mouth in a slight degree by a voluntary effort, while by pulling the jaw gently down she could introduce her finger.

That success, partial as it was, offered encouragement to proceed; but an unexpected occurrence gave room for some hesitation. The same evening, seven or eight hours after the insertion of the needles, the convulsion of the jaw returned spontaneously, with as much violence as at first, and lasted much longer. It was still going on when I arrived not less than half an hour after its commencement. I pressed down the jaw, and in two or three minutes the motion ceased.

My hesitation to proceed after this occurrence was overcome by the patient's own desire for the repetition of the operation. On each of the two following days, two needles were inserted, one on each side of the mesial line, between the chin and the hyoid bone, the effect being precisely the same, nearly to the minutest particular, as on the first day. The convulsion continued after the needles were withdrawn, ceased and became renewed again after a few minutes, and returned spontaneously in the evening on both occasions.

Some increase of voluntary power over the jaw followed both applications of the remedy.

After this the acupuncture was interrupted for a week, owing to some derangement of the stomach and bowels, produced probably by the opiates administered with the expectation of preventing or diminishing the spontaneous movement of the jaw. During this period the joint retained all the motion it had acquired.

On resuming the remedy, several leeches were applied to both sides of the head, about four hours after each acupuncture, with the effect sometimes of preventing the spontaneous convulsion altogether, and always of lessening its severity. After each trial of the acupuncture, some improvement was observable; but as the spontaneous convulsion was almost always followed by a slight loss of motion, the progress made was but slow.

The needles were usually inserted to the depth of half an inch, and sometimes to the depth of an inch; most commonly, as abovementioned, one was placed on each side of the mesial line, between the chin and hyoid bone, while sometimes two or three were introduced, one above another, as near as possible along the mesial line in the same region, and when they were withdrawn about the end of one minute, the effect never deviated materially from that before described. It would have been altogether unwarrantable to make trials with the mere view of ascertaining what variations of effect might result from different methods of using the needles; there was, however, sufficient evidence that the convulsion continued longer, and was more severe when the needles were allowed to remain beyond the usual time, and on one occasion when the needles were in my absence introduced into the masseter of each side, the convulsion was reported to have been more severe owing to the greater violence of the upward movement. No effect was produced on another occasion, when a needle was inserted above the zygoma into the temporal muscle. It must be confessed, however, that the modus operandi of the needles in the production of the convulsive movement is far from being made out in a satisfactory manner.

[The acupunture, together with leeches, was used for ten days, by which time the patient could open the mouth two fingers' breadth, and chew soft substances. She then went into the country for five weeks, by which she derived great benefit, but being exposed to cold and wet on her return, had another severe attack, the consequence of which was the loss of much of the voluntary power over the muscles of the jaw.

The needles were again resorted to with the same effects as before, but the pain produced by the convulsions was greater, and lasted longer; while the spontaneous convulsion recurred several times in the evenings, after each of the first trials. As leeching did not succeed in mitigating the convulsion, the temporal artery was opened with the desired result, and with the effect, at the same time, of restoring to a considerable extent the sight of the right eye, which she almost lost with the first attack of lock-jaw. A second detraction of blood from the same vessel diminished the force of the convulsion so much as to permit the acupuncture to be used twice a day. Nine days after the renewal of the operation, the jaw had recovered its natural extent of motion.

The aphonia, which had come on at the same time as the affection of the eye, was completely cured by a smart shock of electricity.

So great was the effect produced by the recovery of her voice, and complete power over the jaw, that from a mere spectre, she reassumed her natural robust ruddy appearance. This restored state of health lasted some months, when having again been exposed to cold, the voice was a second time lost, together with much of the power of moving the jaw. As the menstrual secretion had been suppressed since the commencement of her illness, emmenagogues were employed, with the effect of producing the natural secretion once, but before the next period severe menorrhagia set in, together with a host of new maladies, as pain in the side, &c., by which she was speedily reduced to a very low condition.

Leeches, blistering, and detraction of blood from the temporal artery, produced no effect on the mobility of the jaw. She was now sent into the country where she rapidly recovered: and in 1833 called on Dr. Seller in perfect health, a robust, ruddy-looking person, and had been free from complaint for more than a year.]

Northern Journal of Medicine, April 1845, *p.* 356.

119.—*On a Method of Applying Cold.*—By JAMES ARNOTT, M.D. The local application of cold furnishes one of the best examples of a remedy originating in the instinctive dictates of nature; but from the mode in which it has hitherto been made, I doubt whether as much harm has not been produced by it as benefit. The usual mode is to place a rag dipped in cold water, pure or medicated, upon the part, renewing it at intervals, according as it becomes heated. This is evidently not a continued application of cold, but a series of changes of temperature, and is likely enough, in many cases, to cause a very prejudicial effect. If ice be substituted, the cold may be too great, and the mischief be increased; and cold affusion, or irrigation, as it has been termed, though often a useful substitute, can only be applied to certain parts of the body, and even to these with much trouble and difficulty. What I have found a perfect mode of applying cold, is to cover the part with a very thin bladder, of the requisite dimensions, containing a small quantity of water of the desired temperature, which is constantly renewed by establishing a current through the bladder, by means of two pewter tubes; one connected with a reservoir, and having a stop-cock at its end to regulate the stream; the other leading to a waste vessel. The elevation of the waste-pipe regulates the quantity of water in the bladder; and as, from the change of position of the patient, this elevation must be frequently altered, it is convenient to rest the extremity of the pipe on the sliding ring of a common retort stand.

By this apparatus the temperature can be regulated with the greatest precision, and (when such a test should guide us) water of that temperature can be chosen, whether high or low, which is most agreeable to the patient's feelings. If sudden and severe cold is desirable, very cold water running rapidly through the bladder will reduce the temperature much more rapidly than the application of ice. Cold and heat can thus be conveniently applied (by fixing the ends of the supply and waste pipes together, and tying them into one end of the bladder) to various internal as well as external parts; the cold to check hæmorrhage, as in menorrhagia; the heat to promote the natural discharge of the part, as in amenorrhœa. When used to restrain hæmorrhage, the plugging of the passage by the distended bladder is an important part of the treatment, and is much better adapted for its purpose than the irritating and less manageable expedients hitherto employed.

A modification of this method of applying cold, contrived for the purpose of combining pressure with it, has been used, on my recommendation, and with great advantage, in a case of strangulated hernia. Cold and pressure are each separately of great efficacy in this disease, as means of obviating the necessity of a dangerous operation; but when their forces are combined, this object will be accomplished, not only more certainly, but more speedily.

Medical Gazette, Jan. 10th, 1845, p. 481.

120.—*Croton Oil Plaster.*—M. Bouchardat recommends the following method of preparing croton oil plaster. Melt eight parts of gum diachylon plaster at a gentle fire, and, when it is semi-liquid, mix with it twenty parts of croton oil. The plaster which results is to be spread thickly on muslin. It will produce considerable irritation of the skin, and may be employed in all cases where revulsives are required. It does not cause such severe pain as many other counter-irritants; and it may be applied over an extensive surface, so that a derivative action may be established proportional to the irritation which is to be combated,—an indispensable condition in the employment of these heroic remedies. M. Bouchardat is fully of opinion that the croton oil plaster will be found available in the treatment of many chronic diseases, both of the respiratory apparatus, and of the abdominal viscera.—*Annuaire de Therapeutique*, 1844.

American Journal of Medical Sciences, Jan., 1845, *p.* 188.

121.—*Separation of the Epiphysis of the Humerus.* Mr. Hancock, describing this accident in the Provincial Medical Journal, says the principal diagnostic signs are the tumour at the end of the coracoid process; the subsidence of the swelling or tumour, when the arm is drawn downwards and backwards, and its return when the arm is let go; the mobility of the limb; the head of the bone not obeying the motions of the shaft when the elbow is rotated: and when the arm is drawn down, the crepitus, or sensation of rubbing, as described by Mr. Allan. Sir Astley Cooper has pointed out the true nature of these accidents, as ascertained from actual dissection, and also the process by which nature effects a reparation of the injury. He says, that upon dissection, in young persons, the head of the bone is found broken off at the tubercle, but remains in the glenoid cavity; that to remedy this mischief a great quantity of ossific matter is thrown out from the periosteum and fractured neck of the broken bone, but very little from the head. A cup of bone is formed upon the fractured neck of the shaft in one of his preparations, which supports the head of the bone, so as to prevent the neck separating from it; a slight union is produced by the cancellated structure, the principal callus being formed by the outer surface, and it incases the bone. In one case which Sir Astley Cooper dissected, the fracture occurred within the capsular ligament; no bony union had occurred, the fragments being joined together by means of a ligamentous substance. With respect to the treatment, he recommends, in a young subject, treating it by binding a splint on the front and back part of the arm with a roller, placing a pad in the axilla, and using a clavicle bandage, the hand, but not the arm, being supported in a sling; and that, in old persons, as the injury is more severe, leeches, evaporating lotions, and quietude, are to precede the application of mechanical means. With these recommendations, Mr. Hancock does not accord. He remarks that the upper end of the humerus is drawn upwards and forwards under the coracoid process, there forming a hard projection; that, by drawing down the arm, the tumour is removed, but that, when the extension is discontinued, it immediately re-appears, and enquires how these signs are to be accounted for? He believes that in these accidents the long tendon of the biceps is either ruptured, or that by the fracture of the head of the humerus, it is deprived of the fulcrum which it acquires in passing over that process, and is thus unable to antagonise the capsular muscles. The upper end of the bone is thus drawn upwards and forwards, by the supra-spinatus and subscapularis muscles. If this be the case, it is evident that the back and front splints of Sir Astley Cooper can present very little, if any, resistance, and that other methods must be employed to effect a cure. Mr. Hancock then advises the placing a pad in the axilla, and applying an angular splint along the inner or palmar side of the arm, extending from the axilla to the tips of the fingers; it should have a hinge and thumb screw to enable the fingers to bend the bone to any angle he pleases; the arm piece should be the exact length of the patient's arm from his axilla to the elbow, as upon this part of the apparatus depends the power of resistance. In order to be accurate, it should be first adjusted to the patient's sound arm, care being taken that it is neither too long nor too short, for an error either way would be prejudicial. The remainder of the splint, or that for the forearm, should extend to the tip of the fingers, to keep the hand perfectly quiet; this splint should be fixed firmly with a roller commencing at the hand; and the splints next applied to the arm, one in front, one behind, and one on the outside, by straps and buckles or by another roller, after which the hand is to be placed in a sling with the elbow unsupported. According to Sir Astley Cooper, passive motion is to be employed for the young in a month, and for the old, at the expiration of two months or twenty weeks.

Medical Times, Dec. 21, 1844, *p.* 249.

122.—*On the Radical Cure of Varicocele.* By M. A. VIDAL (di Cassis.) [In the last number of the Annales de la Chirurg., M. Vidal gives an account of a new operation for the cure of varicocele "par l'enroulement des veins du cordon spermatique."]

His operation is a modification of that proposed by Reynaud. The instruments required are two strong spear-pointed needles, having silver wires of about the thickness of a large pin attached by means of a screw. The surgeon separates the varicose vessels from the vas deferens by means of the forefinger and thumb of the left hand. The needle is then passed between the veins and the vas deferens, carrying along with it the silver wire, about an inch or less of the scrotal integuments being thus contained between the two punctures through which the needle is passed. Another, or the same needle armed with another wire, is then passed through the same openings anterior to the vessels, which are thus contained between the two. The wires are then twisted. By this means the veins are compressed, and, by continuing the twisting, the veins are rolled around the wires as a thread is around a quill, the testicle being thus drawn somewhat upwards. A small roll of bandage is then placed over the integuments between the points of entrance and exit of the wires, which are then fixed over this roll by twisting them together. A small sound is then passed between the wires and the bandage, so as to act as a turnstick. We have thus—1st, Compression of veins between the two wires; 2nd, Rolling up of the vessels upon them; and 3rd, As a consequence of this, division of the veins at different points according to the number of turns which they make around the wire. He recommends that the wires should be allowed to divide the skin, as by that means the superficial veins will be divided, and less risk of a relapse be incurred.

Northern Journal of Medicine, Jan. 1845, *p.* 180.

123.—*Treatment of Erectile Tumor of the Eyelid by Croton Oil.*—By ALEXANDER URE, Esq. [The patient, a little girl, 3½ months old, had an erectile tumor at the inner angle of right upper eyelid, nearly as large as a currant. Subcutaneous puncture with an iris knife was first tried, and, having been repeated without effect after the lapse of weeks, Mr. Ure had recourse to inoculation with croton oil.]

I accordingly made several minute punctures with a cataract needle, besmeared with the oil over the surface of the nævus. This gave rise to redness and swelling, which lasted a few hours, and subsequently to small points of suppuration. This tiny operation was repeated at an interval of a week. The result has proved a rapid diminution, with withering, of the tumor; and now scarcely a vestige remains, with the exception of a slightly puckered speck at the corner of the eyelid.

In a case like the above the employment of the knife would have been inadmissible, not only on account of serious hæmorrhage, but because the cicatrization of the wound might lead to eversion, or shortening of the lid. The use of the seton, escharotics, or vaccination, would have been equally contra-indicated, owing to the risk of violent irritation, or of sloughing. The sole object was to create inflammation enough in the parenchyma of the nævus, and which might be perfectly under control. For the plan of treatment by inoculation with croton oil, the profession is indebted to M. Lafargue, a French surgeon. Not more than five or six punctures ought to be made at one time. A common lancet may be used for the purpose, just as in vaccinating.

Medical Gazette, Nov. 21, 1845, *p.* 786.

124.—*Mode of Arresting Hemorrhage from Leech-Bites.* Dr. Houston recommends the following plan for preventing excessive bleeding from leech bites, and which he has found invariably successful:—Take a small pinch from the felt of a beaver hat, pile it on the bite; or if there be several bleeding points, pile one respectively on each, and spread over the whole a piece of thin muslin, drawing it tightly, so that any blood which flows must pass directly through both; then with a fine sponge keep drying up the blood as it oozes out, and in a very short time both felt and muslin will have become dried, by the coagulation of the blood in thin fine meshes, and the hæmorrhage will have been effectually and permanently arrested. The muslin may then be all cut away, except the adhering points, which, in the course of a couple of days, will of themselves drop off, leaving the parts healed, and free from any such disfiguring marks as those which necessarily follow cautery, caustics, or needles.

The felt of a hat has been long regarded as a styptic; the chief point of novelty in Dr. Houston's plan, is that which relates to the mode of applying it, and which is obviously founded on rational and scientific principles.

Dublin Hospital Gazette, March 1845, *p.* 21.

MIDWIFERY.

125.—ON THE TREATMENT OF PLACENTAL PRESENTATIONS.

By the late KINDER WOOD, Esq , Surgeon to the Manchester Lying-in Hospital.

[On this important subject a new light has lately been thrown, by some very interesting papers of Dr. Simpson, of Edinburgh, and Dr. Radford, of Manchester. It is evident that these two gentlemen have for some time been pursuing investigations on this subject, independent of, and, for a considerable time, unknown to each other; and as we are anxious to avoid all controversy in our pages, we will simply give abstracts of the papers of these gentlemen, and leave the profession to judge. The practice of removing the placenta, however, in cases of placental presentation, seems to have been well known and practised in Manchester for many years, and originated in the practice of the late Mr. Kinder Wood. We are only surprised that the profession has not been more extensively acquainted with this mode of practice.

Mr. Kinder Wood, before relating several interesting cases which occurred in 1821, says,—]

If we find so much exhaustion as to make us fear the effect of further hæmorrhage, during artificial delivery, the first step after passing the hand must be to detach the whole of the placenta; by this the hæmorrhage will be completely suppressed, for the effect of passing the hand through the os uteri, and throwing off the placenta, will always be to produce so much contraction as to arrest the bleeding from the small decidual or uterine mouths. It is satisfactory to know that the child is rarely living in these cases of exhaustion, its blood being poured out through branches of the placental structure, along with that of the mother; and when brought down, its appearance, like that of the mother, is bleached and exsanguined. The time required to separate the placenta is very short, and the loss of blood during the attempt exceedingly trifling. I know from experience, that when the placenta is wholly detached, the hæmorrhage will cease.

In some cases I have been called to attend, when the ordinary method of delivery has been adopted, the patients died, and this led me to modify the practice, and which I adopted in some of the above cases by detaching the placenta, rupturing the membranes, and then delivering the child; but after due consideration I was again induced to vary my plan, and in those cases where we can have no hope of saving the patient if we proceed to delivery, however well the operation be conducted, I have no hesitation in recommending that the placenta be separated completely, and the membranes ruptured, and that the hand be withdrawn immediately upon this being effected, leaving the child and placenta behind. By this practice the patient will be placed precisely in the situation which occurs in the most favourable cases of recovery by the natural efforts.

I conceive no fact in midwifery rests upon a more solid foundation, than that this hæmorrhage will cease upon separating the placenta, and by this practice the patient is placed in as favourable a situation as is possible for recovery. Time will be gained to support her by proper means, and which can be used with greater freedom, as the hæmorrhage is infallibly suppressed by this operation.

[Some very respectable practitioners of Manchester assert, that these opinions of Mr. Kinder Wood have been more or less acted upon in Manchester for many years. Mr. Bryden, writing to Dr. Radford, says,—]

I attended your (Dr. Radford's) lectures on midwifery as my preceptor from 1829—30 up to 1832—33, and having been connected with you afterwards as a lecturer, (on the same subject,) have uniformly been taught, both as a pupil and co-lecturer, this doctrine: that in these extreme cases, the placenta was to be *wholly and entirely detached* from its uterine connections, the tonic contractions established by local and general stimulations, the powers of the woman supported, and delivery effected at the time when the general rules to be observed in other cases point out its necessity.

[Mr. Jesse states that Mr. Kinder Wood]

Most distinctly stated, that to leave a woman undelivered in placental presentation, when the cervix was fully dilated or dilatable, was to consign her to the grave, and that the only chance was to deliver. In his subsequent lectures he greatly altered his opinion, and you may be curious to learn why he did so. Three cases of presentation of the placenta occurred to him in a fortnight, and all died; two of them, according to his then views, ought to have recovered. At this period he was called to another case of placental presentation, a woman about thirty, who had had children and always good labours before. She had for six weeks previous to this had discharge of blood, increasing in quantity till the one which Mr. Wood was called to. She was now at her full time, had lost a large quantity of blood rapidly, and fainted; she was bleached, pulseless, and scarcely conscious. Mr. Wood said, "I durst not deliver, she was so low;" but knowing that by detaching the placenta, I should prevent further hæmorrhage, I slowly introduced my hand, and very cautiously detached the whole of the placenta, without rupturing the membranes. There was no further discharge, the woman rallied, and was safely delivered by natural pains, the placenta coming first away. Her recovery was perfect. The doctrine of detaching the placenta on the principle that hæmorrhage was suppressed by so doing, and leaving the case to nature, he taught in the spring of 1822, as the proper practice in hæmorrhage with exhaustion. This plan I have always followed, and I believe Mr. Wood never changed his opinion.

[Mr. Wilson and Mr. Lowe confirm the above statements.]

Provincial Medical and Surgical Journal, Feb. 26th, 1845, *p.* 129.

[We will now place before our readers the important papers of Dr. Radford and Dr. Simpson. In the one by Dr. Radford there are also some very interesting remarks on galvanism in these cases, which we alluded to in our last volume.]

On the Treatment of Placental Presentations, and on Galvanism Applied to the Treatment of Uterine Hæmorrhage.—By THOMAS RADFORD, M.D., Consulting Physician to the Manchester Lying-in Hospital. [Dr. Radford, in December, 1844, delivered a lecture to the profession on the treatment of uterine hæmorrhage by galvanism, in which he dwelt especially upon those discharges of blood connected with pregnancy in the latter months, and with labour, and which generally produce such a fearful state of exhaustion.

In cases of flooding before and during labour, which have proceeded to this state, whilst some writers recommend delivery, others discountenance it; and while the rules for our guidance in practice are so unsettled, it is highly important to discover if there be not some mode of treatment which shall finally settle the question; and he is convinced there is a great advantage in not delivering in these cases of exhaustion. In these cases it has always been his practice to recommend non-delivery; and thus to contribute somewhat to diminish the immense loss of life which would be shewn in an analysis of those cases in which delivery was adopted, where extreme hæmorrhage was present.

Little weight should be attached to the consideration of the chance of preserving the child's life by immediate delivery, since the child is nearly always dead in these extreme cases. Again, with regard to the life of the mother, prostration enough is present; and the mere emptying of the uterus will most inevitably increase it. Other circumstances too, of which one of the most important is the impediment that may arise from a rigid os uteri, must be taken into account. Again, hæmorrhage may have reduced the patient to this state of exhaustion before labour is sufficiently advanced for forcible delivery to be justifiable.]

In proportion to the early occurrence of hæmorrhage, so will be the obstacles to delivery, as regards the introduction of the hand into the uterus.

[Regard should also be had to the length of the cervix, as well as the degree of subsidence of the uterus into the pelvis, as affected by the period of pregnancy; for]

According as the uterus remains high in the pelvis, so we may be certain that the difficulties of delivery will be proportionate.

[Coagulation of the blood should never be depended upon in these profuse hæmorrhages. The coagula which form in the vagina may, by preventing a careful examination, cause more harm than good; and those formed in the immediate neighbourhood of the various orifices which have been exposed, are of no avail in the more serious cases; and therefore we must trust solely in these large discharges of blood to contraction of the uterus.]

The ordinary means of producing uterine contraction are so well known that I need merely refer to them. We have the bandage, friction applied briskly over the uterus, grasping pressure, secale cornutum, the application of cold, and in the after hæmorrhages the introduction of the hand into the uterine cavity. But all these means may fail in producing this desirable change, and will and do fail in these extreme cases.

[A fatal case having occurred in which delivery was adopted, Dr. Radford was led to examine minutely the arguments of those who advocate that practice, and it struck him that a certain means of producing contraction of the uterus on which we might always rely was a great desideratum. About the same time, he was consulted by Dr. Goodwin in a case which required the application of the long forceps, which did well, but the lady was unable to pass her urine. After a fortnight's trial of the usual remedies, galvanism on Dr. Goodwin's suggestion was tried, with the most gratifying results, since the first application proved permanently successful.]

The decided efficacy of this plan in restoring the energy of the bladder, immediately led me to conclude that it was the very agent that I have already stated was a desideratum to ensure uterine contraction in cases of severe flooding, attended with exhaustion. We had here a woman reduced by loss of blood, with an atonic state of the uterus, either primary or as the result of the discharge. Now, as the advocates of delivery (vide Burns and Hamilton) say that this proceeding gives the woman the only chance of living, because, so long as the uterus remains distended by its contents, and its parietes atonic, those large venous orifices which have been exposed by the separation of the placenta, are so situated that the chances of further effusion of blood exist, it occurred to me that the application of galvanism would so effectually act upon the uterine tissue as to induce firm contraction of its fibres, and thereby at once lessen those large openings, and bring the walls of the uterus into firm apposition with the body of the child, so as to entirely close them. This great object having been attained, we might safely procrastinate the delivery, and adopt such means as would tend to raise the vital powers of our patient, such as the administration of opium, stimulants, and support; and the performance of the important operation of transfusion. With the uterus in this favourable condition, our restorative means, and particularly transfusion, would be far more likely to be attended with successful results than if the organ were distended and atonic; for in this case, the blood which is introduced into the system, either directly by transfusion, or indirectly by nourishment, produces no permanent benefit, because it is rapidly discharged again. Analogy further led me to believe that my conjectures would not prove unfounded, for galvanism is particularly impressive in its influence upon the muscles of recently killed animals, and we know how strictly allied in action, if not in structure, the uterus is to the muscle.

[Dr. R. was soon enabled to prove the correctness of his views by being called in consultation to a case where frightful internal hæmorrhage existed with extreme exhaustion, yet the os and cervix uteri were so rigid that delivery could only have been effected by their laceration.]

Galvanism produces an effective and powerful contraction of the uterus; and not only so, as regards its tonic contraction, but it has also the power of energetically exciting alternate contraction when applied at intervals. I can tell you most seriously and most solemnly, that it produces these two important changes upon the uterus in such a degree as in my previous reflections on the subject I had no conception of. The alternate contraction excited by this agent is analogous to, and as powerful as, that which is observed in normal labour, and the tonic contraction is greater. I shall not relate cases in detail, because it would occupy too much time; but I may state that I applied galvanism in a case where the membranes were unruptured, and the uterus in a state of great inertia, and alternate contraction was immediately produced. Before this the membranes were very flaccid; but as soon as the galvanic circle was completed, they became extremely tense and protruded low down into the vagina; and this state of tension did not subside when the alternate contraction ceased, as is observed in some degree in normal labour; for although the galvanic conductors were removed, so great a degree of tonic contraction of the uterus had been induced that this membranous bag could not collapse.

I am thus satisfied that by the application of this means, we can induce such a state of tonic contraction in the uterus, that, in these extreme cases of exhaustion from hæmorrhage, the woman may be placed in such a state of safety, that delivery may be postponed until a time arrives when it can be safely accomplished, and in the mean time we can have recourse to those measures which tend to raise the vital powers.

I think it probable that it may also produce one of the other natural means of suppressing hæmorrhage which I have already referred to, viz., coagulation of the blood; but this I have not yet positively ascertained by experiment, although I am led to conclude that such is the fact from some remarks made by Dr. Apjohn, in the article, Galvanism, in the Cyclopædia of Practical Medicine.

In my previous remarks, I must be understood to refer to those cases of hæmorrhage where the placenta is not placed over or near the os uteri; but I shall now proceed to speak of those cases in which uterine contraction has a tendency to increase the discharge, cases which are usually described as belonging to the class, unavoidable hæmorrhage. In these cases where the peculiar location of the placenta deprives us of the benefits that usually accrue from the uterine contraction, and as it is the special influence of galvanism to produce this effect, it ought to be the object of the obstetrician so to modify his practice as to place them within the range of this remedy.

[Before describing the plan which he would recommend in these cases, Dr. R. directs attention to the practice of the older writers, and then refers to the mode in which nature sometimes terminates them when left to herself; but first gives some cases of more recent occurrence, where the practice of bringing away the placenta before the child, was adopted.]

It happened to me in 1819 to have a case of placental presentation, where I detached the placenta, because it was hanging down so low into the vagina that there was no chance of doing anything else; the hæmorrhage was immediately suppressed, and the child expelled by the natural efforts. I am also indebted to my friend Mr. Jesse, for the details of a case in which he detached the placenta, and in which the hæmorrhage thereupon subsided. It was the practice of the late Mr. Kinder Wood, in many of these cases, to detach and bring away the placenta, and afterwards to leave them to the operation of nature, or to extract the child by the feet, as the case demanded. A case also occurred to Mr. Wilson, of this town, who kindly related the circumstances to me; the placenta had been rudely brought away by the attendant, and Mr. Wilson found the patient in a state of exhaustion, with the child still in the uterus. He extracted the child a considerable time after the removal of the placenta. It has occurred to me in my hospital practice, to find that the placenta had been brought down in mistake by the midwives in these cases, and this without causing an increase of the flooding.

[Cases are mentioned by Dr. Smellie, Dr. Collins, Baudelocque, and many others, in nearly all of which hæmorrhage was suppressed immediately after the placenta was thrown off; and reference is made to the established fact, that hæmorrhage in cases of partial separation is far more profuse than where the placenta has been entirely separated.]

In the earlier part of the lecture, I stated that one means of adding to the exhaustion already existing, is the evacuation of the uterus, whether that evacuation be partial or entire; therefore I consider that in these cases of placental presentation, it would be a decidedly important point of practice to draw off the liquor amnii *gradually*, as the first step in the management of the case. For this purpose I have somewhat modified Mr. Holmes' instrument for perforating the membranes, making the canula much larger, and having an oval aperture placed on each side near its open extremity. The entire instrument consists of a canula and trocar, which latter always lies concealed within the canula. by means of a spiral spring, except when pushed out by pressure on its button-like extremity. This trocar can be entirely withdrawn from the canula; so as to leave the latter free for the passage of fluid. Now I propose to pass this instrument through the placenta into the amniotic bag, and then remove the trocar, so that the liquor amnii may escape, a plan which I prefer to rupturing the membranes at the side of the placenta, because the water in the latter case would flow too rapidly, on account of the practitioner not being able to limit the size of the opening he might make; and also because by the plan now recommended, the integrity of the membranes being preserved, the placenta is thereby maintained in a better position for acting as a tampon against the open venous apertures when the head comes to press upon it.

In rupturing the membranes in the ordinary method, it is quite obvious that as the connection between the membranes and placenta is broken, the latter is liable to fall down more or less into the vagina. Having thus drawn off the liquor amnii, the next step will be to introduce the hand into the vagina, then to pass the fingers to the edge of the placenta, and carrying them on between it and the os uteri, to sweep the hand round its whole circumference, so as to detach the placental mass, care being taken to avoid rupturing the membranes. We have now brought the case into such a state as to be within the influence of galvanism; for although this practice of detaching the placenta may be a means of suppressing the bleeding, yet it will not restore the depressed powers of the woman; and on that account we still require an agent to induce such a degree of uterine contraction as will secure her from all chances of further hæmorrhage, while we have recourse to such measures as will tend to support her strength.

In order, then, to ensure uterine contraction, we must have recourse to galvanism, and the subsequent management of the case must be conducted on ordinary principles, such as supporting the woman by stimulants, nutritious articles of diet, and transfusion. The delivery should be deferred until the powers of the patient are so far rallied as to justify its being undertaken, however long the interval may be; and that mode adopted which makes the least demand upon her constitutional powers. It may happen that a repetition of the galvanic shocks may, after a certain period, induce such uterine action as will expel the whole of the contents of the organ; and if this should not happen, it appears to me that it would be the best practice, to apply the long forceps, having previously removed the placenta, that is if the head presents. If any other part of the child presents, the case must be managed on ordinary principles.

My remarks have hitherto been confined to the treatment of those cases of hæmorrhage that are attended with exhaustion before delivery, but there are other cases, to which galvanism is equally applicable. If we investigate the cases given by authors, we shall find that there are many cases of accidental hæmorrhage before delivery, where artificial rupture of the membranes has not succeeded in arresting the discharge, on which account several writers, Burns and Hamilton amongst them, advocate delivery in preference to this operation. Now, the artificial rupture of the membranes is recommended for adoption without reference to the condition of the os uteri; and it must be obvious, if this part is rigid and undilatable, and the flooding should continue although the membranes have ruptured, that it would be highly hazardous to introduce the hand and to deliver by force. In such a case galvanism would place the woman in a state of security, by exciting the contraction of the uterus. I also consider that this power would be useful in some of the hæmorrhages of the early months of pregnancy.

With regard to the after hæmorrhages, especially those attended by exhaustion, I consider it particularly applicable where atony of the uterus is the principle feature of the accident. In those cases which occur previous to the expulsion of the placenta, it would be the duty of the practitioner to assure himself that this mass was not morbidly adherent to the sides of the uterus.

In hour-glass contraction, and other forms of irregular uterine action after labour, I anticipate great benefit from its use. In these cases there is a loss of balance between the contractile power of different parts of the uterine fibre, one part being in a state of atony, whilst the other is in a state of firm contraction. Now, if the galvanic current be directed in the longitudinal axis of the organ, it strikes me that you might excite the longitudinal fibres to contraction, and thereby restore the balance.

There are several other topics not directly connected with the subject of this evening's lecture which I shall slightly notice, in reference to galvanism. I am satisfied from positive trial of the remedy, that it will be found a most important agent in tedious labour, depending upon want of power in the uterus, and where no mechanical obstacle exists. I would also suggest the probability of its proving valuable in originating uterine action *de novo*, in cases where it may be considered necessary to induce premature labour. It seems to me also to be worthy of trial in certain cases of menorrhagia in the ungravid state, where, on vaginal examination, the uterus is found to be atonic, as evidenced by its large flaccid condition, and the patulous state of the os uteri.

With regard to the mode of applying galvanism in these cases, I have used an electro-magnetic apparatus, contrived by Messrs. Abraham and Dancer, of this town, for medical and other purposes. It consists of a battery in a small jar, and a helix with conductors. For the sake of convenience the latter are connected with the helix by means of long wires, covered with an isolating material. The strength of the shock is regulated by a small contrivance situated on the stand of the helix, by means of which it can be either diminished or increased. One of the conductors, which is applied externally, has a hollow wooden handle, through which passes the wire before alluded to, in order to join a brass stem terminating at its extremity in a ball. The other conductor, which is contrived by myself, consists of a strong brass stem, seven inches long, curved to suit the vagina, and covered with a non-conducting material, having a small screw at its distal extremity for attaching to it a silvered ball; at its other extremity it is received within an ebony handle, which is hollow, and through which passes a strong brass wire, looped at the end, and connected with the long wires before alluded to. This wire is kept disconnected from the brass stem by means of a spiral spring concealed within the ebony handle. The loop is covered with silk, and is intended for the thumb of the operator, when he is bringing the wire into connection with the stem.

When the remedy is applied, the brass ball of the vaginal conductor is to be passed up to the os uteri, and moved about at intervals, on to various parts of this organ. At the same time the other conductor must be applied to the abdominal parietes over the fundus uteri. Shocks may be also passed transversely through the uterus by simultaneously applying the conductor on each side of the belly.

The application should be used at intervals, so as to approximate in its effects as nearly as possible to the natural pains. It may be continued until it meets the exigencies of the case.

Before concluding the lecture, I wish to observe that it is stated that galvanism has been applied in labour before. When the idea first suggested itself to me, however, it was original to my mind, as I was quite unaware of its ever having been alluded to before. And I may say, with regard to its application in cases of hæmorrhage, and the modifications I have suggested in order to make it effectual in some of the varieties of that accident, that I believe I have been the first to employ it.

Provincial Medical and Surgical Journal, Dec. 24, 1844, *p.* 603.

On Extraction of the Placenta before the Child, in cases of Placental Presentation.—By JAMES Y. SIMPSON, M.D., F.R.S.E., Professor of Midwifery, Edinburgh. [All obstetric authors agree that no complication in midwifery occasions more anxiety to the practitioner, or danger to the patient, than hæmorrhage from placental presentation, and the results of practice fully support this opinion.

Of 174 cases which Dr. Churchill has collected, 48, or nearly one-third of the mothers died. Dr. Simpson has attempted a still more extensive analysis, and finds that of 399 cases recorded, in 115 the result was fatal to the mother, a mortality as great as that of malignant cholera in 1832-33, and twice as great as the average in cases of lithotomy. Looking at the results, any attempt to diminish such fearful mortality is entitled to the most careful notice of the profession.

Hitherto, two great principles of treatment, which some have supposed to be applicable to two different stages of the complication, have been pursued, viz., 1st, The evacuation of the liquor amnii, and 2nd, Delivery of the child by turning.]

This last mode of treatment is the one universally followed when the hæmorrhage is very severe, and whether the artificial evacuation of the liquor amnii has preceded it or not, and it is a plan of treatment usually pursued where the presentation of the placenta over the os uteri is central or entire.

[Some accoucheurs, as Drs. Burns and Hamilton, Baudelocque, Capuron, and others, think this the *only* mode of treatment advisable under any circumstances in these cases. Drs. Merriman, Conquest, Dewes, and Denman, are unanimous in the opinion that turning must be resorted to.]

Cases of Placenta Prævia, says Dr. S., not unfrequently occur in practice in which neither of the two preceding plans can be successfully adopted,—where the artifical evacuation of the liquor amnii is insufficient to moderate the hæmorrhage to a safe degree, and where forced delivery by turning is inapplicable or extremely dangerous if adopted. In these and other cases, I would beg to submit to my obstetric brethren, an additional principle of treatment, viz., The complete separation, and, if necessary, extraction of the placenta before the child.

Obstetric pathologists seem unanimous in the opinion that all the more formidable varieties of hæmorrhage, which occur from the uterus in the latter months of utero-gestation, or the earlier periods of labour, are attributable to the separation of the vascular connections between the placenta and the interior of the uterus, and the escape of blood from the vessels which are laid open in consequence of this separation.

Paradoxical as it may appear, there are sufficient grounds and facts for believing, that when the placenta is separated slightly and partially, the chance of fatal hæmorrhage to the mother is greater than when the disunion of the organ is more entire and complete. Various authors have detailed cases in which the death of the mother speedily took place though the portion of the placenta separated from the uterus was exceedingly small. Thus Dr. Hamilton mentions that in several cases which had fallen under his observation, and where he was called too late to afford proper assistance, it was discovered that the fatal hæmorrhage had proceeded from the separation of "a very small portion of the placenta." In one instance of fatal hæmorrhage between the 7th and 8th month of utero-gestation, he found on dissection that "the area of the separated placenta was less than a square inch."

On the other hand I believe I have collected a sufficient number of data to prove that when the disjunction of the placenta from the uterus is *perfect* and *complete*, the degree of maternal hæmorrhage that occurs is in general exceedingly slight and trifling, or it is altogether arrested.

[Dr. Simpson then details a few cases to illustrate this fact, The first is a case of placenta prævia, in which the placenta was expelled upwards of three hours before the child, yet there was no hæmorrhage in the interval; the child was removed by decapitation and extraction. In the second case the placenta was expelled about two hours before the child, the elbow of the child presenting. The third was a case in which the placenta was expelled some minutes before the child, without intervening hæmorrhage; the child was expelled by natural pains and revived. The fourth was one of great hæmorrhage with expulsion of the placenta under strong uterine action; the child was extracted by turning some hours after. In the fifth, unavoidable hæmorrhage was terminated by expulsion of the placenta, and the child was delivered by natural pains. The next case was one in which the placenta gradually descended into the os uteri, and was expelled four hours before the child, with no intermediate hemorrhage. The next was a case of placental and shoulder presentation; the placenta was expelled and turning was resorted to: and in the last, a case of placental and arm presentation, the placenta remained in the vagina about eight hours before the birth of the child without the occurrence of hæmorrhage.

Dr. S. has collected notes of 141 cases in which the placenta was expelled before the child, which he throws into a tabular form, and divides into—1st, Cases in which a considerable interval elapsed between these two occurrences: 2nd, Cases in which the interval was less than ten minutes: 3rd, Cases in which the child was born immediately after the placenta, or along with it: and 4th, Cases in which the period is not mentioned.

Before stating some of the more important points deducible from this table, it is worthy of remark, that]

The total separation and expulsion of the placenta before the infant, does not seem to be so very rare and uncommon a circumstance as medical men generally believe, and as authors allege it to be. Dr. Collins states, that it is "extremely rare to meet with a total separation of the placenta in unavoidable hæmorrhage." In reporting Mr. Denny's case, Mr. Gower observes, "it is perhaps a solitary instance in the annals of obstetric practice. The placenta was brought into the world before the child. The uterus closed upon the body of the fœtus so as to prevent hæmorrhage, and after another pain the child was born alive. It was a quick labour, and no ill effects followed from an accident from which disastrous consequences might have been reasonably apprehended to both mother and child. Perhaps (adds Mr. Gower) there is no other such case on record, and it merits notice, as an example of the competency of nature to provide for extraordinary emergencies."

The number of cases included within these tables, shows the entire separation of the placenta in placental presentations to be by no means so rare as these and other authors seem to suppose.

[One very important fact, which the tables corroborate is that]

In placental presentations the labour is very frequently premature. In 28 of his 42 cases of *placenta prævia*, Dr. Rigby mentions the date at which labour came on. In 13 of the 28 the labour was more or less premature; in 15 the women are said to have reached the full term of pregnancy. Dr. Lee has reported 36 cases of unavoidable hæmorrhage; in 3 instances he does not state the date of the labour; in 2 only had the women reached their full time; and in the remaining 31 patients, the labour was premature. Levret discusses at some length the question, "why some of the women who have the placenta implanted upon the cervix uteri arrive at the full time, and why the greater part (*la plupart*) of those who are in the same condition do not reach that period.

[Another interesting fact which they prove is that]
Nearly 1 out of every 3 children survived;—or 31 per cent of the children were saved, and 69 per cent of them were lost.

[Mauriceau and Levret both state that hæmorrhage continues after total separation of the placenta. But if we turn from theory to fact, we shall find that practical experience directly contradicts such statements.]
I believe, says Dr. S., that the data which I have collected for the present paper, are amply sufficient to establish as a great physiological and practical fact—that when the placenta, in cases of unavoidable hæmorrhage, is once *completely* detached from its connections with the interior of the uterus, the accompanying flooding in general entirely ceases, or becomes quite moderate and inconsiderable in quantity.
It appears, that after the complete detachment of the placenta, the hæmorrhage was totally arrested in a large majority of the cases; that it was not alarming in its extent in a great proportion of the remaining instances; and that in 5 only out of the 70—or rather in 5 only out of the 111 labours, did it continue so profuse under the circumstances, as to be considered alarming by the attendant, or in such excess as to require special notice in their reports.
Hence in one only out of every 22 labours does there appear to have been a continuance of hæmorrhage to a great or profuse degree after the placenta was detached. One of the five mothers died; the other four all recovered.

[But, if we consider the five cases in which hemorrhage is said to have been profuse after separation of the placenta, we shall find that several sources of fallacy exist as to the correctness of the observation; thus the blood already discharged might readily be mistaken for blood in the act of being discharged; and the probability of this, as shown by the table, is considerable, since in those cases in which there was a long interval between the detachment of the placenta and expulsion of the child, and consequently, time to make correct observation, no instance is recorded in which hemorrhage was considerable. Again, blood might have accumulated in the uterus during partial separation of the placenta, which, escaping after expulsion of the latter, might lead to the same error: the escape of the liquor amnii, mixed with previously effused blood, might also be mistaken for a pure hemorrhagic discharge.
A case is mentioned which is probably unique in the circumstance of the fœtal surface of the placenta presenting, which would seem to prove the existence of an extreme degree of atony of the uterus.]

That the extent of the hemorrhage has no direct relation to the extent of the interval between the expulsion of the placenta and the delivery of the child, is amply attested by the following facts:—All the reputed instances of hemorrhage after the complete detachment of the placenta, have occurred in cases where the interval between the birth of the placenta and of the child, was short or uncertain; or, in other words, among the patients included in the Second and Fourth Divisions of the General Table. Among the cases belonging to the First Division of the Table, in which the interval between the detachment of the placenta and the delivery of the child was longer, and varied from ten minutes to ten hours, and where, consequently, there was more time to observe any degree of flooding that might exist, *in not a single instance, was the hemorrhage observed to be great, or even considerable in extent.* On the contrary, in one only of the forty-seven cases belonging to this division, was it in any unusual degree; in nine, it is reported as "almost none," "trifling," or "slight," or "very slight;" and in twenty-three cases, it was totally and completely arrested. In nine the degree of it, if any, is not stated.

In common cases of placental presentation we have already found, from ample statistical data, that the average mortality to the mother is about 1 to 3. Among the 141 cases of expulsion and extraction of the placenta which we have collected into the Table, ten mothers died, or the average mortality to the mothers was one in fourteen. The difference between the two sets of cases, namely, 1st, Those terminated according to the present recognised rules of midwifery; and, 2nd, Those terminated by the spontaneous expulsion or extraction of the placenta,—is sufficiently striking when thus simply stated.

The evidence in favour of the safety of the termination of such cases by the expulsion or extraction of the placenta before the child, will become still more striking if we turn our attention specially to the ten fatal cases themselves; for we shall find that the fatal result in few, if any of these cases, can be directly traced and ascribed to the circumstance of the placenta being completely separated, or to any possible consequence arising from that separation.

[In all the first seven, detachment of the placenta, and consequent hemorrhage, had evidently little or no connexion with the fatal result, so that we have only, three cases out of 141 attributable to this cause, or one in about every forty-seven, a surprisingly small proportion: and it seems more than doubtful whether such alone was the cause of death, even in these three.]

Summary of Results.—Our inquiry, as far as we have hitherto proceeded, seems legitimately to admit of the following deductions:

1. The complete separation and expulsion of the child, in cases of unavoidable hemorrhage, is not so rare an occurrence as accoucheurs appear generally to believe.
2. It is not by any means so serious and dangerous a complication as might *a priori* be supposed.

3. In nineteen out of twenty cases in which it has happened, the attendant hemorrhage has either been at once altogether arrested, or it has become so much diminished as not to be afterwards alarming.

4. The presence or absence of flooding after the complete separation of the placenta, does not seem in any degree to be regulated by the duration of time intervening between the detachment of the placenta and the birth of the child.

5. In ten out of one hundred and forty-one cases, or in one out of fourteen, the mother died after the complete expulsion or extraction of the placenta before the child.

6. In seven or eight out of these ten casualties, the death of the mother seemed to have no connection with the complete detachment of the placenta, or with results arising directly from it, and if we do admit the three remaining cases, (which are doubtful), as leading by this complication to a fatal termination, they would still only constitute a mortality from this complication, of three in one hundred and forty-one, or about one in forty-seven cases.

7. On the other hand, under the present established rules of practice, one hundred and thirty-four mothers died in three hundred and ninety-nine placental presentations, or about one in three.

Lond. and Edin Monthly Journal of Medical Science, March 1845, *p.* 169.

126.--ON DIVISION OF THE SYMPHYSIS PUBIS IN CERTAIN CASES OF OBSTRUCTED LABOUR.

By David Smith, M.D.

[Dr. Smith says that division of the symphysis pubis is a much less formidable operation than either cæsarean section or craniotomy, and advocates its adoption in certain cases. The operation was founded on the opinion that the ligaments of the pelvis relaxed during labour, a fact well known to occur in many of the lower animals, and which authors of the highest respectability, as Ruysch, Harvey, and Denman, affirm to be not uncommon in the human female; Dr. Denman also mentions a case where it existed in a woman who died three or four days after delivery. Dr. Churchill mentions three cases in which the operation was performed, and all the patients recovered, after having the ossa pubis separated for three inches, two inches and a half, and two and a sixth respectively. Dr. Menzies and Dr. Smith made a number of examinations on *recently dead females*, and found that an inch and a sixth was the greatest extent to which the pubic bones could be separated without injuring the sacro-iliac ligaments. But experiments on the recent subject are far from satisfactory, since in the one case the ligaments seem possessed of an unusual degree of elasticity, while in the other they have the rigidity of dead animal fibre. They satisfied themselves also that the antero-posterior was the diameter least increased by it; that the distance to which the bone could be separated was greatly influenced by the position of the trunk and limbs; that the force required to separate them, such as drawing down a fœtus into and through the pelvis, was much greater than could be justifiably applied to the structure of a living female, and lastly, that, with care, neither bladder, peritoneum, nor urethra, need be injured. The fatal result of many of those cases in which this operation was performed on the Continent, show that these structures had been injured.]

We thus see that the risk of rupturing the sacro-iliac synchondroses past remedy is a very grave objection to the performance of symphysotomy; and if we take into account the accidents which may happen to the bladder or other soft parts within the pelvis, from pressure against the divided symphysis, or otherwise, we are presented with additional arguments against the indiscriminate recourse to this operation in obstructed labour.

The history of those cases in which the symphysis was divided to enlarge the capacity of a greatly deformed pelvis, proves that it can never be adopted as adequate for the extraction of the fœtus through abdominal incisions. In cases of distortion, the diminution of space is principally in the antero-posterior diameter; and Dr. William Hunter and others have shown, by experiments made on distorted pelves, that to increase this diameter an inch, the pubic bones must be separated three inches. Before this space can be gained, however, we have seen that in the *recent subject* there is laceration of the sacro-iliac ligaments, and in the living female the injuries were so great, at a much less extent in many instances, as either to cause death, or render the remainder of life miserable.

Had the proposer and first supporters of symphysotomy confined its application to those cases in which the contraction of the pelvis is slight, I am inclined to think that it might have been substituted with advantage for craniotomy altogether, *under certain limitations*. We can readily believe that cases do occur in which the obstacle to delivery is too great to be safely overcome by the use of the forceps, and where the increase of even less than a quarter of an inch to the contracted diameter might enable the child to pass alive—in short, where delivery is barely impracticable by the forceps, and where it just becomes necessary to open the head. Thus, to use the language of Dr. Burns, "there is but one degree of disproportion betwixt the head and the pelvis which will admit of the division;" and, I would add, there is but one form of pelvic obstruction in which it would be justifiable to operate,—I allude to that in which the brim is sufficiently large and well shaped to permit the passage of the head of the child easily through it, but the tuberosities of the ischia approach so near to each other as to obstruct delivery,—the pelvis is what is called "funnel-shaped." In these cases labour proceeds naturally and without interruption, until the head has reached the outlet, when we find that all further progress is arrested, and the labour can only be terminated by the employment of the perforator. Such are the only cases adapted for symphysotomy; for, where the contraction is in the antero-posterior diameter, the division of the symphysis and separation of the ossa pubis are less calculated to give increase of pelvic capacity, than when the inlet and cavity of the pelvis are well formed, and the contraction is between the ischia. In the experiments above alluded to, we found that the increase of the antero-posterior diameter was nearly seven-sixteenths of an inch by separating the pubic bones to an inch and a half, whereas the increase between the ischia was ten-sixteenths. If, therefore, a case were met with in which, after the careful but unsuccessful application of the forceps, it could be accurately ascertained that a slight enlargement of the pelvic outlet would permit the delivery of an entire child, would it not be more justifiable to have recourse to symphysotomy, by which both parent and offspring might be preserved, than to sacrifice inevitably the one, although such practice did afford a better chance of preserving the other, *if the labour had not continued so long as to have endangered the recovery of the mother, and no uncertainty existed as to the child being alive?* But in a case where the head is high, and prevented from entering the pelvis by contraction—no matter how slight—of the antero-posterior diameter, this operation ought never to be attempted, because the degree of deformity at the brim cannot be satisfactorily ascertained, and this diameter receives least increase by the separation of the pubic bones; nor should it be resorted to under any circumstances when the child is known to be dead.

[The gist of this paper rests on the assumption, that in the human race the maternal passages and fœtal head are so adapted, that a slight deviation from their relative normal proportions becomes a cause of obstructed labour, and Professor Simpson has shown that the slight difference between the head of a male and female child is quite sufficient to account for many of the difficulties and dangers of parturition.]

The well-known compressibility of the human cranium at birth permits the application of the forceps with advantage in the slightest degree of deformity; but, to quote the words of Dr. Osborne, "though nature has, with admirable wisdom, by means of sutures and fontanelles, so constructed the head of the human fœtus that, in the passage through the pelvis, it may suffer the form to be altered and the volume to be considerably diminished without such injury to its contents as shall necessarily destroy life; yet as there is a volume beyond which each fœtal head cannot suffer compression with safety, so there is another and still smaller into which it cannot be compressed at all." When such occurs, and unless the deformity of the pelvis be very great, craniotomy is the operation recommended in this country as the means of accomplishing delivery with safety to the mother. To prevent the destruction of the child, however, it has occurred to me that the attention of obstetricians might again be directed to division of the symphysis pubis in certain cases of obstructed labour; and I have endeavoured to show that when the deformity consists in contraction of the outlet from the approach of the ischia to each other, a correct knowledge of its degree can be ascertained, and this diameter can be enlarged much more easily and safely than any other. The previous history of the operation may seem to offer little in support of the opinions I entertain on this subject, but it appears to me that an excellent argument in my favour is derived from this source, *viz.*, the recovery of the mother, and safe extraction of the child, in the great majority of cases where the deformity was so slight as to be compatible with the moderate separation of parts indicated by the experiments above alluded to; and my inquiry is confined altogether to such. The conclusions, then, to which I have come, may be summed up as follows:—

I. Craniotomy is, in all cases of obstructed labour, justifiable when the entire fœtus cannot be extracted through the pelvis, from deformity at the brim, from osseous and certain other tumours, and from great contraction of the outlet by the near approach of the tuberosities of the ischia to each other,—the obstruction being more than can be overcome by the forceps, *or other means*, yet not so much but that a mutilated fœtus may pass.

II. The cæsarian section must be resorted to whenever the deformity is so great that a mutilated fœtus cannot be extracted through the natural openings; and for which operation symphysotomy can can never be substituted.

III. Symphysotomy is only applicable to cases in which the delivery cannot be accomplished by the forceps, and would require that craniotomy should be performed,—the obstruction being dependent on the *funnel-shaped* form of the pelvis, and satisfactorily ascertained to be such that a slight increase to the contracted diameter would permit an entire child to pass; but in no instance would it be justifiable to resort to this operation if any uncertainty existed either as to the degree of deformity of the pelvis, or the vitality of the child.

Northern Journal of Medicine, Jan. 1845, *p.* 129.

127.—ON SANGUINEOUS TUMOURS ON THE HEADS OF NEW-BORN INFANTS.

By James M. Adams, Esq , Glasgow.

[Mr. Adams has met with several cases of a rare form of infantile pathology, which is scarcely mentioned by British Authors.*

All obstetric practitioners are acquainted with the caput succedaneum, as it is usually termed, a soft tumour formed by effusion of the serum of the blood at the presenting part of the child's head, and which, though usually requiring none but the simplest treatment, sometimes, though rarely, inflames and gives rise to abscess. There is, however, another class of tumours found under the same circumstances, which, on account of their rarity, have either attracted little attention, or have been mistaken for a totally different pathological state. For our knowledge of these we are indebted entirely to French and German writers.

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* Burns, Campbell, &c , contain the nearest allusions to these sanguineous tumours.

They applied various names to these tumours,* for which Nægelè has substituted *Cephalhæmatomata*, from Κεφαλη, "the head," and αἱματωμα, "a bloody tumour."]

Cephalhæmatomata may exist in three forms, viz., under the aponeurosis, under the pericranium, and under the bone.

The *first* kind, viz., that wherein the blood is effused under the aponeurosis formed by the expansion of the occipito-frontalis muscle, is generally considered to be of a simply contusive character, as evidenced by its mode of production as well as by its external and internal anatomical characters. I have seen but one example of this variety; but as it was a consequence of external violence occurring after birth, and not arising in the course of labour, it would be out of place to do more than allude to it. The pathological condition was, however, identical with, and the case illustrative of, the causes which give rise to the affection we are considering. This is the simplest, but at the same time the rarest form of the cephalhæmatoma.

In general it disappears rapidly, and requires only mild discutient treatment.

The *third* variety in the above list, the *subcranial* cephalhæmatoma, which has its seat between the dura mater and the bone, has been but rarely observed, and very little of a satisfactory nature is known regarding it.

The symptoms are those of cerebral compression, but it is impossible to diagnose its existence during life, and it can only be guessed at when it co-exists with an external cephalhæmatoma, which, according to M. Baron, frequently happens.

The *second* variety, or that in which the tumour exists beneath the periosteum, although much more frequent than either of the two preceding, is on the whole a rare affection. I place it last, because it is to it I mainly wish to direct attention, as being the most interesting in a practical point of view.

[Mr. Adams then relates two of the best marked cases of the second variety. He was sent for to examine the head of a healthy male child, which he had delivered eight days before; the presentation was in the second position of natural labour, and the duration of labour six hours, of which the first stage occupied five. The mother and friends were alarmed at what they called "a hole in the child's skull." There was a soft fluctuating tumour over the left parietal protuberance, which felt as if circumscribed by a ridge of bone that seemed to mark the boundary of an opening into the skull. But, on more careful examination, the bone could be felt in the centre of the apparent hole, which, together with the absence of pulsation, &c., satisfied him that it was a case of cephalhæmatoma. Evaporating lotions and slight pressure with a bandage were accordingly used, and in three weeks the tumour had entirely disappeared.

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* Baudelocque calls them "bloody tumours of the cranium," and "ecchymosis thrombus" were amongst the names applied to them. By the Germans the term "head blood-swelling" is used.

Another case of exactly the same nature occurred in the practice of Dr. Menzies, which was left to the efforts of nature, and recovered without any treatment.

The presence of a bony ridge, circumscribing the tumour, which gives the impression of an opening in the cranium, is the most striking peculiarity, and of the greatest practical importance. The bone within the circle can generally be felt uninjured on pressing the finger firmly from the edge to the centre. The time the tumour takes to become fully developed varies from a few hours to as many days, and it seldom disappears entirely within four or five weeks.

Various are the opinions as to its causes, some holding that it is a consequence of severe labour or the use of instruments, whilst others say that when it occurs it is almost always after very easy labours. M. Nægelè at first considered that it was caused by the laceration during labour of the blood-vessels which ramify through the skull, and which he supposed were in a varicose condition, but now thinks there is no certainty on this point.]

But the most important researches on this point have been made by M. Valleix, who has illustrated his views by a train of close reasoning, the result of much philosophic observation. He considers that cephalhæmatomata do not exist before the occurrence of labour, and that they are the consequence of force or pressure employed upon the child's head during delivery. For a right understanding of his views it is necessary to advert to the anatomy of the parietal bones in the infant. At birth the pericranium adheres but slightly to the bone, with the exception of a few lines at the sutures and fontanelles, and consequently a slight force is sufficient to strip it off. In doing so, numerous vessels are seen to enter the fissures of the bone. The bone itself ossifies from one point in the centre, *i. e.*, the parietal protuberance, and bony radii shoot from the centre to the circumference. These radii are best seen on a dried preparation. Haller noticed that on compressing the head of an infant even slightly, after removing the pericranium, he saw springing from between these radiated fibres innumerable drops of blood, which, collecting together, formed a thin layer over the bone. M. P. Dubois, after corroborating Haller's experiment, suggested that the fact furnished a probable explanation of the formation of the bloody tumours of the head. M. Valleix, after numerous observations, confirms the theory of Dubois, and concludes that if pressure, and above all, if circular pressure, is made upon a point of the cranium, blood will spring from the surface of the bone, and by its upward pressure strip off the pericranium, which is easily detached; that as the liquid blood accumulates under this membrane, new outlets will be opened up for the escape of more blood, and thus at length a tumour will arise. Assuming this as as a settled point, he considers that the pressure of the child's head against the mouth of the uterus causes, according to the degree of pressure, either the simple sero-sanguineous tumour, an ecchymosis, or a sub-pericranial cephalhæmatoma. Several circumstances concur to favour this view. Among others may be mentioned the almost invariable presence of an ecchymosis between the bone and pericranium in the new-born infant, a circumstance first noticed by M. Valleix, and which I have now had repeated opportunities of confirming. It is likewise important to bear in mind that cephalhæmatomata are always seated on the parietal bones, and most frequently on the right, which is precisely what we should expect from the fact, that the position of the fœtus in utero is such, that one of the parietals is pressed against the os uteri more frequently than any of the other bones of the head, and that the right parietal presents much more frequently than the left. It may be objected that if their cause is so constant, how comes it that cephalhæmatomata are so rare? M. Valleix replies, that the most favourable cases for the production of the tumours are those in which a very large portion of the parietal, to the exclusion of the rest of the skull, presents at the orifice of the uterus, and that such cases rarely occur. Another important objection appears to lie in the statement of Nægelé and other eminent authorities, according to whom the affection occurs only after labours of an easy description. But what is understood by labours of an easy description? Is length of time to form the measure of our ideas ? "Is not an accouchement," asks M. Valleix, "which lasts four, five, six hours, and more, where the pains occur in continuous succession and gradually increase, and where the head, when it does present favourably, finds a ready passage—is not such a labour an easy one? and in this accouchement does not the head suffer very considerable pressure, either in passing the os uteri (*traversant le col*) or in gliding through the pelvis? Do we not often see following such accouchements sero-sanguineous œdema, the necessary cause of which is very strong and long-continued pressure? Instead of easy labours, we should say speedy labours."

[The contents of the tumour may vary in quantity from a scruple to nearly eight ounces. Dr. W. Campbell, in one case which he punctured, obtained a large teacupful, and in another half a teacupful of slimy sanguineous matter.]

There are but few diseased appearances occurring on the heads of new-born infants likely to confuse the diagnosis; and it requires little more than a knowledge of the existence of such affections, and of their distinguishing characters, to prevent our falling into error.

A favourable prognosis may in general be given. If, however, the cephalhæmatoma be of great size, or remain undiminished for several weeks, the bone is apt to become affected, when, from the excessive discharge, and the constitutional disturbance attendant upon the extension of the disease to the brain, death will almost inevitably result.

Regarding the treatment of cephalhæmatoma there needs not much be said. In many cases—I might almost say in most cases—no treatment is required, or at least, the treatment adopted may be of the simplest description, and used principally with the view of preventing the parents or friends from becoming anxious. When the tumour is small, causing no uneasiness, and not threatening to inflame, there may be used a simple evaporating lotion, such as a solution of muriate of ammonia with alcohol, and this treatment may be conjoined with slight pressure. But when the tumour is large, and does not diminish at the end of a fortnight or three weeks, these means are likely to fail, and it may be necessary to adopt more active measures to procure absorption or evacuation of its contents.

[Dr. Zörer, of the Foundling Hospital of Vienna, employs cold applications and calomel when cerebral congestion is supposed to exist, and almost invariably opens the tumour, a most injudicious practice when hastily adopted.]

Lowenhardt recommends puncture with a trocar, and strapping; and to this plan I am inclined to give the preference, using, however, the ordinary knife for subcutaneous puncture instead of the trocar. Where the contents of the tumour are fluid it will be equally efficacious, and the wound will be more readily disposed to heal by the first intention.

The wound must afterwards be treated on the ordinary principles, and the simpler the dressing the better. In making the incision care must be taken to avoid the arterial vessels; for, in a case operated on by M. Valleix, death followed the division of a small branch, and Smellie records a similar unfortunate case which happened in the hands of one of his pupils.

Northern Journal of Medicine, Dec. 1844, *p.* 78.

128.—ON CHRONIC INVERSION OF THE UTERUS.

By Alfred H. M'Clintock, M.D.

[Dr. M'Clintock has published the particulars of two cases of this disease, so distressing in its symptoms, and so fatal in its tendency if allowed to advance unchecked. In one]

The inverted uterus was removed by ligature in the ward of this hospital appropriated to the diseases of females; and the other derives its interest chiefly from these two circumstances: first, that an unsuccessful attempt was made to revert the displaced organ; and secondly, because that it presents a striking example of what may be considered the usual course of the disease, when unarrested by the interference of art.

[The patient in the first case was twenty-four years of age, and her health was on the whole good, though she had suffered from exhausting uterine discharges. Since her second confinement, five years before, in which, after thirty-two hours continuance of labour-pains, the attendant used forcible manual assistance to expedite the delivery.

Ten or twelve hours after labour was concluded, on sitting up in bed, the uterus prolapsed, but was immediately returned, and this occurred for several weeks. She suffered from constant aching in the back, with head-ache and nausea, and palpitation of the heart was produced by any slight exertion. The tumour was felt in the vagina only when the patient strained.]

Upon making a vaginal examination, a globular tumour was readily felt, round which the finger could be freely carried, and encircling the upper portion (which was smaller in circumference than the part below) the os uteri was plainly perceptible. When a catheter was passed up between the os and what may be called the neck of the tumour, it was very soon completely arrested, and this was found to take place no matter at what point in the whole circumference the instrument was pushed up.

When the tumour was gently handled no complaint was made, nor indeed did she seem conscious of what was done; but if rudely pressed some uneasiness was produced, and the small of the back referred to as its seat. The surface of the tumour was of a deep red colour, and had a rough, somewhat villous appearance, and a sanguineous discharge was distinctly seen issuing from it at numerous points. At the time of this examination the catamenia were upon her.

[The case had been mistaken for procidentia uteri, but physical examination revealed its true nature, and extirpation was determined on. A strong fishing line was accordingly applied by Dr. Johnson around the neck of the tumour, by means of Gooch's canula, the canula being left between the anterior part of the tumour and the vagina. When tightened she complained of pain in the back, and in a few hours the ligature had to be loosened, as this symptom, together with sickness, had become very distressing. The evening of the following day it had to be relaxed still more, as these symptoms still persisted. Notwithstanding that it was thus loosened, the discharge had become fetid on the second day after the operation. The symptoms continued during the progress of the case, varying only in degree. Nausea occurred frequently; the pulse was always somewhere between 100 and 120, but had no other character of inflammation: the tenderness in the hypogastric region was constant, but of unequal intensity, but the greatest distress was caused by the pain in the lumbar and sacral region, and this was most intolerable for a few days before the ligature came away. The discharge was highly offensive, acrid and irritating—for this an injection of tepid water, with a little solution of chloride of soda, was used daily.]

In consequence of the great amount of pain which she suffered, and the extreme soreness of the vagina, the canula was altogether removed on the eleventh day, leaving the ligature around the tumour in a deep groove which it had already formed for itself. Two days after, Levret's canula was substituted in the place of Gooch's; little advantage, however, resulted from this, as every attempt to tighten the ligature was followed by such an aggravation of the pain and sickness as obliged us to desist.

To relieve the more urgent symptoms of pain and loss of rest, opiates had constantly to be given, and latterly, indeed, their administration was indispensable. Within the first two or three days, the catheter had to be passed twice or thrice, but after this it was not again required.

On the 18th day it was found that the neck of the tumour was more than half cut through; and on the 28th day Dr. Johnson divided with a bistoury the portion that remained included in the ligature, which was very small, but as we were anxious, if possible, to preserve the tumour from injury, its removal from the vagina without occasioning an increase of pain to the patient became a matter of no small difficulty. This arose partly from the large size of the tumour, which about equalled the head of a five month fœtus; and partly also from the extremely tender and irritable state of the vaginal membrane. After several unsuccessful attempts, with such means as the exigency of the moment suggested, it was at last extracted by the aid of a bone forceps, one blade of which was placed in the cavity of the tumour, and the other on its exterior surface.

[A vaginal examination, made three weeks after the removal of the uterus, found the os tincæ a little open, and much resembling the state it is in eight days after parturition. Six weeks after the completion of the operation she was in excellent health, slight weakness of the back alone remaining.]

In commenting upon this case, I would beg leave to notice two or three points of practical interest, which appear to deserve particular attention; one of these was the comparative insensibility of the tumour upon an ordinary examination, thus shewing how little value can be attached to this symptom as a diagnostic between polypus and inversio uteri. In fact, the diagnosis in the case just related, was grounded mainly upon, 1st, the fungous appearance of the tumour, and the circumstance of a sanguineous fluid exuding from numerous points on its surface; and, 2ndly, the result of an examination made by passing up between the os uteri and neck of the tumour a blunt instrument, which (as already mentioned) was soon arrested, and at nearly an equal height all round. Another feature worthy of note was, that from the time the ligature was put on all hæmorrhage ceased, and this appears the more remarkable, when we recollect that within a few hours from its first application it had to be relaxed, and during the greater part of the entire period that it remained round the tumour, it was quite loose. This fact is not only interesting but important, as confirming an observation of the late Dr. Joseph Clarke, namely, that "the pressure of the ligature is capable of restraining the discharges," although it may not be practicable to continue it sufficiently long to effect the removal of the inverted organ. A case exactly illustrative of the point in question is related by Dr. Ramsbotham, in which the ligature had to be removed within twenty-five hours, owing to the supervention of violent peritoneal inflammation; nevertheless, the profuse sanguineous and leucorrhœal discharges, in a great measure, ceased, and the patient regained the enjoyment of very good health. This is the fifth instance in which Dr. Johnson removed the uterus; and in all the former ones the ligature was composed of fine, well-annealed silver wire and silk twisted together, and applied by means of Levret's canula; but in the present case Gooch's canula, with a flexible ligature, was used, and owing to the greater facility which this instrument affords, the ligature was put higher up round the tumour than in any of the previous cases. A knowledge of this fact will serve to explain why, with this patient, the vomiting and pain were more constant, and the necessity for keeping the ligature slack more imperative than with any of the others upon whom he performed the operation. In every future case it would be well to have at hand various means calculated to extract the detached tumour out of the vagina. For this purpose it has occurred to us that some modification of the fillet might be advantageously used, as with it no hurt could be inflicted on the vagina, or injury to the tumour; but this latter, perhaps, will appear to some a matter of very secondary importance.

[In the second case, the patient, æt. 31, had had a tedious labour with first child, requiring the use of instruments, and the placenta had been removed with difficulty. Whenever she assumed the upright position she had a very unpleasant dragging sensation in the uterine region. Three weeks after labour she had an attack of hæmorrhage from the vagina. Shortly after she went a journey of ninety miles, performing it in two days. On the second day after she had a severe attack of hæmorrhage, with faintness, and a tumour appeared below the vulva.

Dr. Johnson, on examination, ascertained that the case was one of partial inversion, with prolapse of the whole uterus. The uterus was easily replaced in the vagina, and Sir P. Crampton, a few days after, attempted on two following days to revert it, but ineffectually, —great pain, irritability of stomach, and syncope being brought on thereby. A week after, hæmorrhage again came on. As soon as practicable she was removed to the sea-side, but she gradually sank exhausted, nine months after confinement.]

During this time the most prominent symptoms were, the hæmorrhages, the irritability of stomach, and the mucous discharge; the two former of which always seized her at each return of the menstrual period, and continued for several days, whilst the mucous discharge was observed to take place during the intervals.

This case is so instructive, and the information it conveys so plain, as to leave little necessity for comment. We shall, therefore, make only a few observations upon it. In a practical point of view one of the most interesting features in the history of the case is the formidable symptoms that were induced by the attempts at reversion, though make by a skilful and dexterous hand. This seems clearly to justify the conclusion that such an operation is capable of producing the most unpleasant and even dangerous consequences, and hence ought not to be undertaken without having duly and carefully weighed the probability of its success. There is one instance recorded in which this displacement of the uterus was rectified so late as twelve weeks after delivery; but this, I believe, is only a solitary example, and certainly ought not to have much weight in deciding upon the propriety of resorting to a measure, which, if it does not succeed, may add so greatly to the suffering, if not the danger of the patient. The failure in the case of Mrs. E., where the period that had elapsed was not eight weeks, and where the degree of inversion was very partial, and the operator a man of acknowledged ability, tends very forcibly to strengthen this opinion. As contrasted with the first case related in this paper, the symptoms were much more acute, and hurried the patient on more rapidly to a fatal termination. This would seem to indicate that the severity of the symptoms cannot be estimated by the amount of displacement; for with Byrne there was a greater degree of inversion than with Mrs. E., and yet the duration of the complaint with the former was upwards of five years, whilst the latter was carried off by it within ten months.

The melancholy result of this case must make it a matter of regret that the ligature was not applied in the first instance, and must contribute to shew the necessity of resorting to this, the only practicable mode of cure, before the patient be so far reduced as to render it an operation of positive danger, or questionable propriety.

In both of these cases it will be remarked, that there was some manual interference by the attendant in removing the placenta, by which, doubtless, the inversion was produced. Indeed I cannot help expressing my conviction that whenever the uterus is inverted at the time of parturition, it is to be attributed to some mismanagement of the delivery of the after-birth; in confirmation of which I would adduce the accumulated experience of Drs. Clarke, Labatt, Collins, Kennedy, and Johnson, in this hospital; which does not furnish a single instance of the occurrence of this accident, though the number of women delivered during their united masterships amounts to upwards of seventy-one thousand! I am happy to find that the same opinion is also entertained by Dr. Robert Lee. In his published Lectures (p. 425), he says, "I have great difficulty in believing that spontaneous inversion of the uterus can ever take place, for inversion cannot occur if the uterus is contracted even in a slight degree. This can easily be demonstrated, and in examining the bodies of many women who have died soon after delivery, I never saw the uterus in such a state of complete relaxation as to render it possible for the intestines, however forcibly driven against the fundus by the action of the abdominal muscles in vomiting, coughing, or sneezing, to produce the accident. It must be obvious," he continues, "that the uterus cannot be inverted by its own action; there must be something to draw or push it down."

Dublin Journal of Medical Science, March 1845, *p.* 42.

129.—ON TURNING.

By J. Y. SIMPSON, M.D., F.R.S.E., &c.

[Many writers on midwifery recommend that in the operation of turning, both feet should, if possible, be grasped and pulled down. We entirely agree with Professor Simpson in the following very judicious remarks.]

In most cases I hold this method to be improper and unjustifiable, because it is almost always more difficult to seize both extremities than to seize one; because one is quite sufficient for our purpose, and more safe for the life of the mother; and because by pulling at one extremity (when pulling does happen to be required after the version is accomplished) we more perfectly imitate the natural *oblique* position and passage of the breech of the infant, than when we drag it down more directly and more upon the same plane, by grasping and dragging at both limbs equally. The infant also assuredly incurs less risk of impaction of the head, and above all, less chance of fatal compression of the umbilical cord, when the os uteri and maternal canals have been dilated by the previous passage of the breech, increased in size by one of the lower extremities being doubled up on the abdomen, than when both extremities being seized and extended, these same passages are more imperfectly opened up by the lesser-sized wedge of the breech alone.

Notwithstanding, however, the great difficulties and consequently the greater dangers attendant on the operation, when we search for, and grasp both lower extremities, instead of one, it is still so dogmatically laid down as a rule by most obstetric authorities, that many practitioners seem to deem it a duty, not to attempt to turn the child without having previously secured both feet.

In few or no cases of turning is it proper or requisite to bring down both extremities, unless in the complication of turning under rupture of the uterus. In that case, but in that only, ought we to follow at once this procedure,—and here we follow it because, if we left the other extremity loose in the uterus or abdomen it would be apt to increase the lesion in the walls of the organ, if it happened to get involved in the aperture, or impacted against its edges. In some very rare instances in which, after version by one leg has been effected, and immediate delivery is necessary, the cervix and os internum occasionally contract so forcibly and strongly upon the protruded limb, whenever we drag upon it, as not to allow a sufficient amount of traction being applied to this extremity without fear of lacerating its structures. In such cases it may be well to attempt to repass the hand to secure the other extremity, for then by pulling at both extremities together, we incur less chance of injuring them than if we applied the same required amount of force to either of them singly.

Should we seize one Extremity only?—From what I have already stated, you know my opinion, as to this being the proper method of proceeding in almost all cases of difficult turning. The method was long ago spoken of by Portal; and within the present century, Hoffman and Joerg in Germany, and my friend Dr. Radford in this country, have severally written on the subject, and upheld, that in *no* case of turning ought we to lay hold of more than one extremity, for the purpose of effecting the version of the infant. I have just pointed out what I conceive to be two—perhaps the only two—exceptional conditions to this general rule.

I believe the seizure of the knee to be preferable, in most, if not in all cases, to the seizure of the foot, or rather, as it should be more correctly stated, to the seizure of the ankle of the child. I speak, you will recollect, of turning in cases of shoulder or arm presentation, in which the liquor amnii has been for some time evacuated, as in Anderson's case, and the uterus by its tonic contraction has clasped itself around the body and head of the child. Under such circumstances, it is an object of importance not to be obliged to introduce our hand farther than is absolutely necessary, into the cavity of the uterus, because the contraction of the organ, in many cases, opposes its introduction, and the forced introduction of it is apt to produce laceration.—It is an object also of equal moment to attempt to turn by a part which produces as little change as possible in the figure and form of the infant; because, if we thrust any of the angulated parts of the child against the interior of the contracted uterus, we should also thus be still more liable to produce rupture of that organ.—Now, holding these points in view, it appears to me, that the turning of the child by seizure of the knee presents several decided advantages over turning of the child by seizure of the foot. For,

First, The knee is more easily reached. As we slip our hand along the anterior surface of the protruding arm, and along the anterior surface of the thorax of the child, we always, if the attitude of the child has not been altered by improper attempts at version, or very irregular uterine action, find the knees near the region of the umbilicus of the infant—the lower extremities, as you are aware, being folded up *in utero* so that the knees are brought up to that part, and the legs flexed upon the thighs in such a manner that the heels and feet lie nearly in apposition with the breech of the child. To seize a foot, therefore, we should require to pass our hand about three inches (or, in fact, the whole length of the leg) *further* than we require to do in order to seize a knee.

Secondly, The knee affords the hand of the operator a much better hold than the foot.—By inserting one or two fingers into the ham or the flexure of the knee, we have a kind of hooked hold which is not liable to betray us. Every one, on the other hand, who has turned by the foot or feet, knows how very apt the fingers are to slip during the required traction, and how much in this way the difficulties of the operation are sometimes increased.

Thirdly, We produce, I believe, the necessary version of the body of the child more easily by our purchase upon the knee—because thus we act more directly on the pelvic extremity of the infant's spine, than when we have hold of a foot.

Fourthly, Turning by the foot appears to me to endanger greatly more the laceration of the uterus than turning by the knee.—The reason of this is sufficiently evident. When we turn by the foot, we have to flex the leg round upon the thigh, and thus at *one* stage of the operation, and during one part of the flexion of the leg, we are obliged to have the leg bent to a right angle with the thigh, and the foot of the infant thus projected and crushed against the interior of the uterus. You see this when, on the infant before me, I seize hold of the foot, and turn it round from its position at the breech, till I bring it up to the shoulder, the part which we are supposing to present at the os uteri. You can easily thus perceive, that when the angled and long leg of the child is thus brought round, it must rasp and scratch (if I may so speak) along the interior of the contracted uterus, and endanger to a fearful degree, the laceration of the organ. It is needless to say how much all this danger is increased, when, after having brought down one foot, we pass again our hand, and attempt to bring down a second foot, (as is recommended by some authors,) for thus we only double the danger of laceration of the uterus, from the forced and obstructed passage along its interior, of this other extremity.

One point remains for our consideration. Granting that it is proper to seize a knee, I think it a matter of the very first moment to know which knee should be seized?

On this point you will find no directions in any of our modern obstetric works, British or foreign, as far as I know them; and yet I believe the secret of turning with facility and safety in such a case as Anderson's—with the waters evacuated and the uterus contracted—depends upon the knowledge of which of the two lower extremities of the infant should be seized. If we turn with one of the extremities—and whether the foot or the knee—it should be the foot or knee of the limb on the *opposite side of the body* to that which is presenting. Thus, if the right shoulder or arm presents, we should take hold of the left knee or foot; and if the left arm or shoulder presents, we should take hold of the right knee or foot. I repeat, that I believe this point to be of the most essential importance: and the reasons for the rule are simple.

In bringing down the fœtus in the operation of turning, we may, and should produce, two kinds of alteration in its position and figure. Thus, we may bend or flex the body forwards upon the *transverse* axis of the trunk; and we may rotate or turn the body round upon the *longitudinal* axis of the trunk. If we merely flex it, the operation of version will be one of difficulty; if we both flex and rotate the trunk at the same time, the operation will be one of comparative facility. By merely flexing the body upon its transverse axis, we are liable to bring down one of the lower extremities, whilst we do not displace the upper extremity, which is primarily presenting at the os uteri. If we *both* rotate and flex the body—that is, turn it both on its transverse and longitudinal axes—at the same moment, whilst we bring down the pelvic extremity of the child, the turning of the body of the infant carries away from the os uteri the part originally presenting.

Many of you must be acquainted with the fact, that obstetric authors have proposed various methods of removing away from the cervix uteri the presenting arm or shoulder, in order to allow of more space for the part which is brought down, and to produce the necessary evolution of the child. Thus some recommend the presenting part to be pushed up before we seize the feet; others advise the foot to be seized with the one hand, and the presenting part to be pushed up with the other; and others again counsel us to bring down one or both feet, secure them with a tape, (as you see in the plate of Moreau,) and, whilst pulling with this tape, to introduce the hand, after the lower extremities are brought down, for the purpose of pushing up the presenting portion of the upper extremity.

All these rules and complications are at once avoided by following the principle that I have just stated to you, of bringing down, whenever it is possible, the knee opposite that of the presenting arm or shoulder. When we do this, by carrying the knee diagonally across, if I may so speak, the abdomen of the child to the os uteri, we both, as I have said, *flex and rotate* at the same time the trunk of the infant, and in doing so, the semi-rotation of the trunk inevitably carries up the presenting arm, in proportion as the knee which is laid hold of is pulled down by the operator. I would add this, as another of the advantages of turning with one extremity, for if we pulled down both knees or both feet, or the foot or knee which was nearest to us, we would produce in many instances mere flexion of the body, *without* that rotation of it which is necessary to carry up and out of the os uteri, the presenting part of the infant.

I have insisted upon the advantages of taking hold of the knee that is highest and furthest from you, and believe this to be a matter of the very first moment. Now, it may appear to some of you that it would be more difficult to seize this knee than the knee of the side corresponding to the presenting arm; but if you reflect for a moment you will see that this difficulty is more imaginary than real. Both knees of the child, as the infant lies folded up in utero, are generally in juxta-position, and lying upon the abdomen of the infant, near the umbilicus. If, therefore, in passing your hand into the uterus, you insinuate it as you ought to do, along the anterior surface of the thorax and abdomen of the child, you come in contact with both knees at the same time. And the rule which I would give you is this, that instead of hooking your finger, or fingers, into the flexure of the lower or nearer knee, you hook them instead into the flexure of the upper, more distant, or opposite one. Both are so far, in general, equally near, or equally distant, and you seize the one or the other according as you take care to turn your finger so as to hook it into the flexure of the lower or the flexure of the upper.

Lond. and Edin Monthly Journal of Medical Science, Feb., 1845, *p.* 110.

130—ON INFLAMMATION, INDURATION, AND ULCERATION OF THE CERVIX UTERI.

By J. Henry Bennnet, M.D, &c. &c.

Dr. J. H. Bennet states in a paper published by him under this title, that he has ascertained, to his complete satisfaction,—setting aside cancerous disease:—firstly, that in the very great majority of adult females, who have been exposed to sexual intercourse, a confirmed leucorrheal discharge, whatever may be its nature, is accompanied by inflammation of the neck of the uterus; secondly, that this inflammation seldom exists long without producing ulceration; and thirdly, that ulceration is always accompanied by more or less engorgement (swelling with or without induration) of the substance of the uterine neck. The causes, frequency, extent, and nature of the disease, which complicates or occasions the leucorrheal discharge, vary very considerably, according to the functional state of the uterus. In carrying out these views, Dr. Bennet makes four divisions of inflammation and ulceration of the neck of the uterus, namely, as affecting the uterine cervix in women, who have never conceived; as affecting the same part in those who have conceived; syphilitic ulceration; and lastly, malignant or cancerous ulceration. The inflammation which attacks this organ in women who have not conceived, is nearly always confined to the mucous membrane, the deeper structures seldom becoming implicated, except in cases of general metritis. The inflammation may co-exist with general vaginitis, as is generally the case in gonorrhœa, or it may be confined to the uterine neck, and to that part of the vaginal cavity which is in contact with it, viz., the superior fourth or fifth; or it may be limited to the orifice of the os uteri. It may be attended with profuse leucorrhœa, or, as when the inflammation is very limited, the discharge may be very slight. Other symptoms are pain in the loins, sometimes deeply-seated pain in the hypogastric region, behind the pubes, and pain experienced during sexual intercourse. There is also felt a vivid sensation of heat at the upper part of the vagina, but there is no complaint of weight, heaviness, or bearing down, except in extreme cases, in which the disease has been long neglected. The neck of the uterus is found on examination by the toucher, to be increased in heat and volume, and also in elasticity, but there is not any general or deep-seated induration of its tissue. Ulceration generally begins at the orifice of the uterine cavity. When it exists, it almost invariably gives rise to a slight, but perceptible induration of the tissue underneath. It is, however, very superficial, consisting merely of a thickening of the ulcerated mucous membrane and of the sub-cellular tissue. It is generally felt most distinctly at the edge of the uterine lips, where the mucous membrane passes into the cavity of the neck, and where, consequently, two mucous thicknesses are approximated by the folding of the membrane. With the aid of the speculum, the tumefied cervix when inflamed, presents a more or less intense red, glistening hue, instead of the pale, dull, whitish colour, which is natural to it. On its surface may frequently be seen small white or red vesicular or papular elevations, the result of distention or hypertrophy of the mucous follicles. When the mucous membrane is ulcerated, the glossy appearance of the membranous surface is lost, and a number of small vascular granulations of a vivid red hue, are seen covering the ulcerated region, after the mucus has been wiped away with a pledget of lint. Sometimes the ulcerated surface appears raised above the adjacent level, whilst occasionally on the contrary it appears depressed. When the ulceration is at the entrance of the os uteri, it is often difficult to discover, unless the uterine lips be slightly separated. There is generally a mass of semi-transparent mucus occupying the cavity of the os uteri. The ulceration may be so superficial and slight as to be scarcely perceptible, or it may extend over a considerable portion of the cervix. A slight oozing of blood is sometimes caused by the use of the speculum, or by intercourse. Menstruation is generally more painful than in the healthy state, and occasionally slight irritation about the urinary organs is present, giving rise to frequent desire to urinate. There is seldom much general reaction, unless it be such as is occasioned by the annoyance and distress of mind which the local lesion causes in many instances. In the female who has never been impregnated, the inflammation, ulceration, and induration, are nearly always superficial, limited to the mucous membrane, because the uterus, although duly performing its menstrual function, is still, as it were, in a dormant state, its mucous membrane being a mere film, and its proper tissue in an elementary fibro-muscular state, very sparingly supplied with blood, and possessing a very subdued vitality.

Medical Times, March 15, 1845, *p.* 515.
(From the Lancet.)

Treatment.—[Dr. Bennet states that as inflammation of the mucous membrane covering the cervix uteri runs rapidly into ulceration, the latter is what we are generally called on to treat. Instances of inflammation alone are, however, occasionally met with, and the most efficacious remedy undoubtedly is then the nitrate of silver lightly applied. The peculiar influence of this remedy in mucous inflammation is daily becoming more frequently recognized.]

After the mucous surface has thus been slightly cauterized, emollient or slightly astringent injections (acetate of lead or sulphate of zinc) must be used three or four times a-day; complete rest must be enjoined; sexual congress strictly forbidden; and the general health attended to. The disease is nearly always so entirely a local one, that it is not necessary to resort to any general medication, unless the state of the health seems to demand it. A brisk purgative or two, however, can do no harm, and will often do good.

On the parts being again examined, in the course of a week or ten days, the inflammation will generally be found to have subsided, unless it co-exist with blennorrhagia, in which case it will prove much more difficult to eradicate, and must be treated in the same way as in the other regions of the sexual organs. Sometimes, nevertheless, it will be found advisable or necessary to re-apply the nitrate of silver to the mucous surfaces, a second or even a third time. This occurs more especially when the injections have been improperly performed, as is usually the case if the patient is not instructed as to the way in which they should be used. Females generally use vaginal injections in a stooping posture, and the result is, that the injected fluid falls out of the vagina, without having attained the uterine neck. This M. Ricord has proved to demonstration by the following experiment:—With the assistance of the speculum he introduced a piece of lint into the upper part of the vagina, and then carefully withdrawing the instrument, told his patient to use the injection syringe in the usual stooping position. On afterwards extracting the lint he found that it had not even been moistened.

To obtain the full effect of the injection, the patient should recline on the side of a bed, or of a lounging chair, elevating the pelvis, so as for the vagina to form an inclined plane, of which the cervix is the most dependent point. The vagina thus retains the injected fluid, like a vase; it penetrates gradually into every part, and, remaining in contact with the inflamed tissues for a few minutes, exercises a decided influence on them.

[Although this treatment is decidedly the most speedy and efficacious, yet direct cauterization is by no means indispensable.]

Astringent injections properly used, or even emollient injections, rest of the organs, and attention to regimen, will often suffice to prevent ulceration, and to subdue the inflammation, although not in so short a time, or so surely as the former treatment.

[Inflammation of the cervix is rather difficult of cure, from the anatomical disposition of the parts, the pus being confined between the vagina and cervix uteri, tends to keep up irritation, and thus a slight inflammation, which on a surface that could cleanse itself of the morbid secretion, would soon run its course, is perpetuated, and leads nearly inevitably to ulceration.

Rest alone, is indeed sufficient for cure, in cases of slight ulceration, unaccompanied by general hypertrophy, though the treatment is much more tedious than if cauterization is at once resorted to, and repeated as required. Dr. Bennet remarks that, however careful the tactile examination, yet unless we make use of the speculum, we shall be treating our patient very much in the dark; and when once this has been granted for diagnosis, its further use, as a means of treatment, is not likely to meet with any obstacle on the part of the patient, and still less on that of her friends. He lays down as an axiom]

That the basis of the treatment of inflammatory ulceration of the cervix uteri is, the cauterization of the ulcerated surface. If the inflammation has not penetrated to the deep tissues of the cervix, and there is no general inflammatory hypertrophy of the organ, cauterization, combined with emollient and astringent injections, rest both of the organ and of the system, and attention to the general health, is all the treatment that is required, and will generally effect a cure in from three or four to six weeks.

[The beneficial influence of astringent applications and of superficial cauterization, is especially manifest in the treatment of solutions of continuity on the mucous surface of the various orifices. This is owing to the ulceration being protected by the eschar thus formed from the contact of foreign substances, and thus the process of reparation is allowed to take place undisturbed. In ulceration of the uterine neck, the eschar protects also the abraded surfaces from the contact of the pus which itself secretes, and in which, owing to the anatomical disposition of the parts mentioned, it is bathed.

The progress of the inflammation and ulceration is generally at once arrested by cauterization; and when this is suspended, even though injections, &c. be used, the ulceration is nearly certain to relapse.

Cicatrization nearly always takes place first at the margin, but towards the end, points will occasionally appear in the centre of the ulceration, and by their extension abridge the process. The cicatrix is pale and ash-coloured, which is pretty much the natural colour of the healthy cervix.]

The agents used for the cauterization of the ulcerated cervix are various. The principal are the nitrate of silver and the acid nitrate of mercury. The latter is exclusively employed by many Parisian practitioners, among whom I may name M. Emery. It is a dissolution of deutonitrate of mercury in nitric acid; is much in use for the treatment of foul ulcers in the French hospitals, and has been adopted by the French codex; it is prepared in the following manner:—To four parts of mercury add, in a retort, eight parts of nitric acid; when the dissolution has taken place, reduce to nine parts by evaporation. It is a very dense dissolution of deutonitrate of mercury in an excess of acid, and contains 71 per 100 of the deutonitrate. This agent is a powerful caustic, giving rise to a white eschar, which does not fall for five or six days. When the inflammation is intense, the ulceration large, and the granulations redundant or unhealthy, it exercises a very prompt and beneficial influence, generally cleansing and modifying the sore in one application. In slight ulcerations, however, I think it is too powerful a remedy, and that the solid nitrate of silver answers the purpose much better.

When recourse is had to the nitrate of silver, its application may be repeated every fourth or fifth day, whereas the acid nitrate of mercury must not be applied oftener than once a-week, The eschar formed by the former, being much more superficial, falls off much sooner. In either case, whenever cauterization is resorted to, whatever be the agent, the blood or mucus which covers the cervix must be wiped off before the caustic is applied, otherwise the greater part of its power is lost in coagulating these fluids. This can be done conveniently by means of a little lint or sponge, held in a pair of long forceps; those which I use are thin, (abont eleven inches in length,) and made on purpose. The solid nitrate of silver, fixed in a long porte caustic, must be drawn two, three, or four times over the ulcerated surface, according to the effect wished to be obtained.

In order to apply a fluid caustic the following plan must be resorted to:—A small thin stick, about a foot in length, having been chosen, is formed into a brush, by inserting between its divided extremities a few shreds of lint or linen, which are then fastened by a few turns of thread. These little brushes may be made *extempore*, without much trouble, and being of no value, can be thrown away after being used. The brush, having been introduced into the acid, should be pressed against the rim of the bottle, in order that it may be merely moistened with the caustic. It is then drawn over the ulcerated surface. Some practitioners inject a little water into the speculum before withdrawing it in order to absorb any superabundant acid. This precaution is not absolutely necessary if care has been taken not to use too moist a brush.

Owing to the powerful cauterizing properties of several acids, it would perhaps be as well, however, for a person unaccustomed to the treatment of these diseases to adopt the precaution when employing them. In that case a straight syringe, holding about half a pint of water, should be used, and the water injected into the vagina before the speculum is withdrawn. By changing the position of the pelvis, the injected fluid may be easily made to fall into a small basin. When the nitrate of silver is employed no such precaution is necessary under any circumstance. The contact of uncombined caustic with the neighbouring parts, always more or less inflamed, can only be productive of benefit.

For the last few years the hydrate of potassa, fused potassa, has been a very favourite caustic in Paris. It has been run into long lead moulds, or pencils, which render its use as easy as that of a stick of nitrate of silver. M. Boys de Loury, at St. Lazare, scarcely employs any other preparation in the cauterization of uterine ulcerations. Caustic potassa, in this form, is a very powerful and valuable caustic, but requires to be managed with great care; in the hands of a careless practitioner it might do great mischief; I merely resort to it when the nitrate of silver or the acid nitrate of mercury fail to produce the desired effect. There are, no doubt, many other chemical cauterizing agents which would do as well, or nearly as well, as the above, such as nitric and hydrochloric acids, &c., but their use has not, as yet, been sanctioned by experience. In my own practice, for the purposes of superficial cauterization, I confine myself to the nitrate of silver, the acid nitrate of mercury, and occasionally the fused potassa.

I must not omit to mention the mode of cauterization followed for the last few years by M. Jobert (de Lambelle), the talented St. Louis surgeon. He cauterizes nearly all uterine ulcerations with the actual cautery. This plan of treatment I shall fully discuss when speaking of the treatment of the more severe forms of inflammation of the cervix. So energetic a remedy, I may even now state, is clearly not indicated in the slight ulcerative inflammations unaccompanied by general hypertrophy, of which I am speaking. In concluding what I have to say for the present on the subject of cauterization, I may remark, that the application of caustic to the cervix gives little or no pain, whichever may be the one employed. The actual cautery itself is, indeed, scarcely felt more than the nitrate of silver. Considering the nearly total absence of spinal nerves in the cervix uteri, we have no reason to be surprised that this should be the case. As to the danger of metritis and peritonitis, on which some eminent practitioners who have written on the subject have laid so much stress, there is not a vestige of foundation for the fears which they have expressed. I have certainly seen cauterized, or cauterized myself, several hundred females, and have never yet seen a really serious symptom follow. Cauterization, such as I have described it, may give rise to some few hysterical symptoms in nervous females, but that is all. It must, however, be well understood, that I am speaking of cauterization properly and discreetly performed; in the hands of well-informed and careful practitioners. The strong caustics are at all times dangerous weapons in the hands of ignorant or careless practitioners, especially when thus applied in the depths of the human economy. If the nitrate of mercury or the potassa fusa were applied to, or allowed to run on, the vagina, which is as sensible as the cervix is insensible, it would occasion severe pain and inflammation, perhaps retraction of tissue, or even more serious consequences: such results have occurred repeatedly in the hands of unskilful practitioners.

Injections act in two manners:—first, they carry away the muco-pus secreted by the inflamed and ulcerated surface, thus preventing it stagnating, and increasing the irritation; and, secondly, they act as therapeutic agents, by their contact with the diseased surfaces. In those cases in which the inflammation is confined, or nearly so, to the uterine cervix, the inflamed surfaces having been touched with the nitrate of silver, emollient injections are alone needed, such, for instance, as milk and water, infusion of linseed, decoction of mallow or marshmallow, &c.; tepid or cold water alone, indeed, would be quite sufficient in most cases.

If the inflammation is more general on the parietes of the vagina, astringent injections should be resorted to. Those which I use principally are dissolutions of acetate of lead, of sulphate of zinc, and of sulphate of alumina and potassa. I begin with about one drachm of either of these salts to a pint of water, and increase the proportions according to the results obtained.

Although, when there is no inflammatory hypertrophy, the obscure pains that are experienced in the hypogastric and lumbar regions are but slightly increased by walking, yet every kind of exertion should be refrained from during the treatment. The cervix is congested if not engorged, and is probably not so firmly embraced by the vagina as not to be more or less frictioned against the parietes of that organ during progression. However that may be, it is certain that rest, in the horizontal position, is very beneficial, and that the quieter a patient remains during the treatment, the easier it is to effect a cure, even in comparatively slight cases. This I have often seen in hospital practice: women, whom we could not cure as out-patients, got well in a few weeks when once in the hospital. There was, however, another reason which contributed to render the cure easier on patients in the hospital than with those who were attended from out of doors. It was possible to enforce with the former sexual abstinence, which it was only possible to recommend to the latter. It is, however, indispensible that this should be observed, for otherwise it is vain to look for a speedy recovery. What the physician or surgeon does, the husband undoes. Unfortunately, although intercourse is rather painful to a female thus affected, it is not sufficiently so to act as a bar.

Throughout the treatment it stands to reason that the general health must be attended to. Every function must be examined, and if an indication presents itself it must be obeyed. If the disease has existed for a length of time, and abundant leucorrhea has long been present, the general health will often be found to have suffered secondarily. In that case the cephalalgia, palpitations, cardialgia, anorexia, insomnia, weakness, &c., being evidently the result of the disease, scarcely require any particular treatment. As the local affection is ameliorated, and the discharge decreases, the general health nearly always rallies, and the symptoms alluded to gradually give way, *substractâ causâ, attollitur effectus*. In these instances it is often possible, however, for the physician to assist the efforts of nature, and that he must accomplish as he best can, according to the peculiarities of each case, and the laws of rational therapeutics.

The simple treatment which I have above described will nearly always suffice to cure inflammation of the cervix, accompanied or not by ulceration, when that inflammation has not penetrated deeply into the tissue of the organ, and given rise to chronic inflammatory hypertrophy. When such is the case, various other therapeutic measures are frequently necessary. We have no longer inflammation of the mucous membrane of the cervix only to contend with, but inflammation of the entire organ. A more energetic treatment is, consequently, often indispensable.

Lancet, May 3rd, 1845, *p.* 495.

131.—*Position of the Occiput in Labour.* It is to Prof. Naegelé, senior, that we are indebted for having first pointed out the remarkable fact that in the position of the head which after the first occurs most frequently, and where the occiput during the latter periods of labour is universally allowed to be turned forwards, and to the right, the posterior fontanelle is *originally* directed towards the right sacro-iliac synchondrosis, and *not* to the right foramen ovale as commonly supposed, but that as the head approaches the outlet of the pelvis the occiput turns forwards into this position. The correctness of this interesting fact is now generally recognized over the whole German continent; it was made known in this country fifteen years ago, by the translation of Professor Naegele's essay on the mechanism of parturition; it has been practically established in the Midwifery Reports of the General Lying-in Hospital by the translator Dr. Rigby, and is confirmed and taught by Dr. J. Y. Simpson, the present distinguished professor of Midwifery in Edinburgh. So far from the position with the posterior fontanelle to the right and forwards being of such frequent occurrence, as an original position it is one of the rarest. In 3491 cases of cranial position observed by Professor Naegelé, jun., it occurred only four times.

The position with the anterior fontanelle forwards, and to the right is also very rare. In the above-mentioned 3491 cases it was observed only eight times. From facts, however, of which we have been for many years aware, we are inclined to think that this proportion is too small, and that the position with the posterior fontanelle to the left sacro-iliac synchondrosis, and the anterior one to the right foramen ovale occurs, at an early period more frequently than is supposed: that, as labour advances the posterior fontanelle turns towards the left foramen ovale, as in the second position it does from the right sacro-iliac synchondrosis to the right foramen ovale. This we have ourselves observed, and we suspect that the apparent rarity of the position is rather due to this change taking place sooner during labour than in the other case.

Sometimes also the head, when in the second position, does *not* make the usual turn; the anterior fontanelle, which was originally directed forwards and to the right, instead of turning towards the right sacro-iliac synchondrosis, turns more forwards towards the right foramen ovale, and the superior and anterior quarter of the left parietal and upper portion of the left frontal bone, is the part which first passes through the os externum.

British and Foreign Medical Review, Jan. 1845, *p.* 68.

132.—*On Nates and Footling Presentations.* The real cause of danger to the child's life during labour with the feet foremost is admirably set forth by Professor Naegelé. In no case can so much mischief be done, and that so easily, as in nates or footling presentations. In no case is a thorough knowledge of, and confidence in, the powers of the uterus, and the application of judicious assistance at the right moment, so important. In pointing out the injurious effects of attempting to hurry the expulsion of the child, Professor Naegelé well observes:

"If it be the uterus which expels the child by the pressure it exerts upon it in all directions, the chin, firstly, will continue pressed upon the breast during the whole passage of the child through the pelvis, and thus ensures the head passing through in the most favorable position. In the second place, the arms remain pressed upon the breast, and are born with it at the same moment. Thirdly, the soft passages will be sufficiently dilated by the gradual advance of the child in order that they should offer less resistance to the head when it follows; and fourthly, by the gradual progress of the labour, the uterus is only gradually emptied of its contents, its contractile power increased, and thus enabled, by sufficiently powerful contractions, to force the head into and through the pelvis within the proper time. But if the child be pulled at, whereby the pressure of the uterine contractions, which acts on all sides of the child, and which keeps the chin and arms pressed upon the breast, the arms slip up on each side of the head, the chin recedes from the breast, and the head approaches the brim of the pelvis in the most unfavorable position, together with the arms at the same moment. The soft parts are dilated too quickly and violently, and the contracting power of the uterus much injured from its contents having been too rapidly withdrawn. It therefore becomes unable to force the head into and through the pelvis."

British and Foreign Medical Review, Jan. 1845, *p.* 71.

133.—ON PUERPERAL CONVULSIONS.

By W. Tyler Smith, M.B., London.

[Dr. Smith quotes the opinions of most writers on this subject to show the doubt and even confusion which exists as to the cause of puerperal convulsions. The general opinion seems to be "in favour of considering direct or secondary *cerebral congestion* as the grand cause of convulsions in the puerperal state." Dr. Smith remarks:]

It is a well established fact in physiology, that in animals, mechanical irritation of the spinal marrow within the theca vertebralis, of the medulla oblongata, and the corpora quadrigemina, will cause convulsions. It is also well proved that irritation of every other part of the brain and cerebellum may be carried to any extent without producing convulsive action. Loss of voluntary motion may be thus caused, but the involuntary and spinal motions, those which in morbid excess constitute spasm and convulsion, remain unaffected. When the whole of the lobes of the cerebrum and cerebellum have been carefully removed, convulsions may be occasioned to any extent by irritation of the cranial termination of the spinal marrow. All these data have been abundantly proved by the vivisections of Magendie, Schoeps, Flourens, Hertwig, and Dr. M. Hall. In one interesting experiment performed on the dog, Dr. M. Hall found, that while irritation of the brain produced no effect, pinching the dura mater lining the cranium, to which branches of the fifth are distributed, excited convulsions, so that the brain is actually *in*-excitor of spinal action, while the meninges are strongly excitor. The brain, although the sensorium commune, has neither nerves of common sensation nor of excito-motion. This is supported by pathological observation. A tumour gradually developed in the brain itself may excite no cerebral or spinal symptoms, while a spicula of bone on the inner surface of the skull may occasion epilepsy.

It would appear to be a necessary deduction from these facts, that whether we use the term spinal *marrow*, or any other name, we are bound to consider the medulla spinalis and oblongata with the corpora quadrigemina, as forming together one distinct organ—as being a division of the nervous system, which pathologically, as well as physiologically, must be looked on as separate from the brain, cerebellum, and the simple sensatory and voluntary nerves of the spinal *chord*.

Thus, then, we should have,—1, The *cerebral system*, composed of the brain and cerebellum, in connexion with that part of the spinal *chord* which conveys sensation and voluntary motor power to and from the brain, which might be termed the intra-vertebral chord; and 2, The *spinal system*, consisting of the spinal marrow, (exclusive of that part of it devoted to the transmission of volition and sensation,) together with the medulla oblongata, and the corpora quadrigemina. This division into the cerebral and spinal systems, though they are each of them both cranial and vertebral, as regards anatomical position, the spinal extending into the brain, and the cerebral situated partly within the vertebral canal, is in nowise theoretical, but a matter of fact, admitting of the most severe physiological proof. Indeed, as Professor Grant and Dr. Marshall Hall long ago predicted, it has been found, by Dr. Carpenter and Mr. Newport, that in the invertebrata the excito-motory cord is anatomically distinct from the cord of nerves devoted to sensation and voluntary motion. Such a division is of great moment for the present pathological purposes. It is necessary, as we proceed, to keep the mind close to the subject, and draw a clear line of demarcation between those parts which belong to each respectively.

Let us now examine some of the presumed causes of puerperal convulsion, and first of all, the subject of cerebral congestion.

During the pregnant and puerperal states, there is a greater tendency to fulness of the circulation than at other times, and in labour, especially in some of its stages, this vascular plethora particularly affects the head. In the second stage of labour, when the presence of the head of the fœtus in the vagina has excited the reflex action of the expiratory muscles, there is, during every pain, partial or entire closure of the glottis. This interferes with the circulation; and, moreover, during the severe pains, a state of partial asphyxia takes place, as may be seen by the distended state of the veins of the head and neck. The same venous congestion must occur to the spinal marrow, particularly its upper portion, though this has escaped the notice of writers on the subject.

It would follow from the above, that if simple pressure on the cerebral vascular system caused convulsions to as great an extent as obstetric authors generally suppose, they ought certainly to occur far more frequently during the second stage of labour than at any other time. But this is not the fact, as patients frequently fall into convulsions before labour has commenced, or during the first stage, when the respiratory system is undisturbed, or the patient may pass through the second stage of labour, when the disturbance of the circulation is at its maximum, without any sign of convulsion; and they often appear for the first time after delivery has been completed.

These facts alone are, I submit, sufficient to overturn the most generally received opinion as to the *cause* of puerperal convulsions. The error has arisen partly from observing the immense distention of the vessels of the upper part of the body during the paroxysm, and partly from the congestion and serous or sanguineous effusion sometimes found after death. But it can be made clearly evident that these signs are in the great majority of cases not the *causes*, but the *results*, of the disease. Rarely, excepting in convulsions occurring during a pain in the second stage of labour, can the congestion of the brain be fairly considered the *exciting* cause of the convulsions; and even here we have two causes in operation—the irritation of the excitor nerves of the uterus as well as the vascular fulness.

Lancet, Nov. 30, 1844, *p.* 280.

[After a long paper on the subject, Dr. Smith sums up his opinions on this subject as follows:—]

Labour is a function of the excito-motory system, and the true puerperal convulsion can only occur when the central organ of this system—*the spinal marrow*, has been acted on by an excited condition of an important class of its incident nerves—namely, those passing from the uterine organs to the spinal marrow, such excitement depending on pregnancy, labour, or the puerperal state. While the spinal marrow remains under the influence of either of these stimuli, convulsions may arise from two series of causes—of those acting primarily on the spinal marrow, or *centric* causes, and, secondly, those affecting the extremities of its incident nerves—causes of *eccentric* or peripheral origin.

I. Causes acting immediately on the central organ:—
  1. Loss of blood.
  2. Pressure exerted on the spinal marrow by congestion, coagula, or serous effusion within the cranium, &c.
  3. Asphyxia of the spinal marrow from spasmodic closure of the glottis.
  4. The influence of emotion.

II. Causes acting on the extremities of excitor nerves:—
  1. Irritation of the incident spinal nerves of the uterus and uterine passages.
  2. Irritation of the incident spinal nerves of the rectum.
  3. Irritation of the gastric and intestinal branches of the pneumogastric nerve.
  4. Irritation of the incident spinal nerves of the bladder.

5. As probable causes, may be enumerated, irritation of the cutaneous nerves, the nerves of the mammæ, and of the hepatic and renal branches of the pneumogastric.

Though the subject distinctly admits of this division, several causes may act together, and centric and eccentric causes may be in operation at the same time. I have made no attempt at a division into predisposing and exciting, proximate and remote causes, as other writers have usually done, because it is evident that a cause which in one case is the exciting or proximate, may in another be the predisposing or remote cause. Thus, irritation of the uterus may be the predisposing, and irritation of the stomach the exciting cause, in one instance, while in another, irritation of the uterus is both the predisposing and the exciting cause; hence, any such division must be, to a great extent, arbitrary, and devoid of precise meaning. For instance, Dr. Ramsbotham, in a passage I have quoted, says, "the most usual *proximate cause* of puerperal convulsion is probably pressure on the brain;" whereas it can be shewn that cerebral pressure is usually a symptom produced by some *exciting cause* previously in operation. The same authority mentions irritation of the stomach and intestines among the *remote causes*, though there can be no doubt of their being generally exciting causes when they exist as causes of any kind.

The views of the nature and causes of puerperal convulsions, developed in the present paper, are, as I believe, capable of important practical application in the treatment and prevention of the disease.

Lancet, Dec. 7th, 1845, *p*. 312.

[Any researches into the pathology of this truly formidable disease will be duly appreciated by the profession. Dr. Smith, in his paper on this subject, justly deduces from the opinions held by the first authorities of the day, that cerebral congestion is looked upon as the most frequent source of the disease; Dr. Powell thinks he will find it difficult to prove that this state does not play a most important part in the causation of puerperal convulsions. For Dr. Powell asks,—]

If true puerperal convulsions can only occur from an excited condition of the incident uterine nerves acting on the spinal marrow, is it not strange that such a vast number of deliveries take place without convulsion ?—and how is it, that in those in which it occurs, the great majority are, at all events, attended with well-marked symptoms of congestion of the nervous centres, relieved by copious venesection and other depletive (sedative) measures? which I am of opinion would be contraindicated if we suppose a mere alteration in the dynamic state of these centres, independent of material alteration in the capillaries, give rise to the disease?

Lancet, Feb. 1st, 1845, *p*. 120.

134.—RUPTURE OF THE UTERUS AND ABDOMINAL PARIETES, &c. &c.

By Dr Prael, Director of the Obstetrical Institution of Hildesheim.

A newsvender, æt. 28, enjoying good health both during her early infancy and adult life, but deformed from rickets, in whom the catamenia appeared at the age of 13, entered the Midwifery Hospital of Hildesheim, far advanced in pregnancy, shortly expecting to be brought to bed. A careful examination satisfactorily proved that the great diameter of the true pelvis, "du petit basin," was only two and a half inches. It was, therefore, probable that she could only be delivered by the cæsarean operation. Labour set in by powerful but useless pains, and the fœtus furnishing abundant proofs of life, the operation was determined on. Accordingly an incision was made in the direction of, and upon the linea alba; the peritoneum and the uterus were opened upon a director, (sonde connelée,) and without the slightest lesion; a living female child, well formed, and arrived at full time, was drawn forth. By a slight traction upon the umbilical cord, the placenta was extracted through the same opening. The hæmorrhage did not amount, at the most, to a pound of blood. The edges of the uterine wound were then brought together as closely as possible by means of six "points" of suture, carefully avoiding the peritoneum. The lips of the tegumentary wound were placed in apposition, leaving, however, a small opening at the inferior angle, for the free escape of any fluid that might otherwise accumulate within. During the operation, which was borne with most heroic courage, the patient experienced only one slight nausea; she was not much exhausted by it, and declared that she felt herself quite well. On the day following, the infant was applied to the breast, which it took with evident satisfaction. The issue of this accouchement was of the happiest nature; the mother suffering but a slight accession of fever, caused by an accumulation of milk, her infant refusing the breast, from being attacked with trismus nascentium, of which it died on the ninth day. The mother recovered perfectly, but slowly; at the expiration of two months from the operation there was complete cicatrization of the wound; at that of eight months, a reappearance of the catamenia; and in the ninth month, she left the hospital in excellent health, at which time the cicatrix was five inches in length, and from half to three quarters of an inch in width. In the beginning of the following year, she again became pregnant. During the first four months which followed, she enjoyed such good health, that she, for the first time, noticed her state, by the movements of the infant in the twenty-first week. These movements were accompanied by violent dorsal pains, lasting but for a few minutes only; she paid but little attention to them, from having experienced similar at the age of sixteen. She now noticed an ulcerated spot upon the skin, which was slightly swollen; it was situated at the right side of the abdomen, at the distance of the width of the hand from the cæsarean cicatrix. This ulceration daily extended in points, pouring out pus. and sometimes blood, causing but little or no pain; simple dressing was applied.

On the 14th of July, 1843, having taken cold, she had an access of fever, accompanied with pains in the sides, back, and abdomen, for which Dr. Schrœder was called in; he found that part of the abdominal integuments, which we have described, œdematous, and of a reddish brown colour, and about the width of the hand in extent. The fœtus could be so distinctly felt through the abdominal parietes, that on first consideration it was considered to be extra-uterine. A solution of muriate of ammonia in liquorice juice was ordered, and the wound dressed with a mild ointment. The same evening, pains having the character of labour-pains, set in, but disappeared on the 16th. The muriate of ammonia was continued, causing a sensible diminution of the cough, and febrile excitement. In a short time, the patient was able to leave her bed; the movements of the fœtus were no more felt.

On the 18th, she experienced a pressing desire to make water, and go to stool; she arose, made a few steps forward, and called for her sister to hand her the vessel, when suddenly a crack (*craquement*) was heard, accompanied with a rupture of the abdominal parietes, through which the fœtus, enveloped in its membranes, could be felt. In this fearful dilemma, alone, and left to her own resources, with both hands, she retained the infant in the rupture, until help arrived. A midwife was called, who found the patient standing, the membranes being torn, she had merely to take away the infant, which was dead. Dr. Schrœder, who arrived one hour after, found a large rent in the abdomen, situated below the umbilicus, in a transverse direction; the membranes, and a part of the omentum, protruded at the right, whilst the cord, and the placenta, still adhering to the uterus, appeared at the left. Fearing, lest upon the extraction of the placenta, the intestine might escape, he called in Dr. Prael, on whose arrival, the patient, notwithstanding all she had suffered, was yet in a state not to be despaired of. She was pale, and the pulse was small; but there was not anything in her manner, or the expression of her countenance, which indicated particular danger; the hæmorrhage had not been very abundant, the wound smarted a little, but was not painful. This solution of continuity was at least five inches long, extending one and a-half inches to the left side of the cicatrix, and three and a half inches to the right; its lips were so separated, that at first view, it was not easy to say whether it was transverse or perpendicular; its edges, particularly the inferior, were œdematous, swollen, turgid, turned inwards, and unequal; below this opening, and about an inch from its edge at the right, there were two patches of extravasated blood, both transverse in direction, and one inch and a-half in length. At the right of the centre of the rupture, a tumour, of a violet colour, and of the size of the head of a new-born infant, was seen; it was the membranes, filled with coagulated blood; behind and above this, a portion of the omentum, as long as the hand, and the width of three fingers, protruded, the placenta in part visible, and a considerable portion of the cord, filled the left side of the wound; there was no escape of the intestines. As the cord was so thin, that it could not bear the slightest traction, without danger of being torn, it was necessary to introduce three fingers into the uterus, through the abdominal opening, in order to remove the placenta. The uterus had already so much contracted, that it was quite impossible to learn, with certainty, the direction which the rupture had taken in it: the placenta, which was attached to the posterior wall of the uterus, gave trouble in its removal, and caused considerable pain to the patient.

During this operation, no part of the intestines protruded. In order to shun any such accident, the operator made the examination as short as possible, confining himself to washing away the blood, bringing the edges of the uterine opening together, and returning the omentum in the best way he could. The edges of the abdominal wound were so puckered (*plissés*), swollen, unequal, and œdematous, that sutures could not be used, they were therefore held together, by adhesive straps, placed perpendicularly. Having cut away with scissors a small portion of the peritoneum, which was only held by a few filaments, at the right angle of the wound, the dressing was completed by soft compresses, and a bandage. An examination of the genital organs was next proceeded with, but nothing was found in the vagina. The orifice of the uterus was smooth; the os was dilated to about the width of two fingers, through which there was no flow of blood, or any other fluid. The reaction which followed so serious a lesion, was held within due limits, and there was but little fever. The state of the wound, however, gave rise to the most serious apprehension At the removal of each dressing, a considerable quantity of sanious sanguineous fluid was discharged; its edges assumed an unhealthy aspect, and the patient complained of severe pains in the loins.

The opening, becoming gangrenous, gave issue to a very fœtid sanious discharge; however, with the exception of the stools, all the functions were normally performed, and the lochia transmitted through the natural passage. Quinine was administered, under the exhibition of which the aspect of the wound gradually changed, assuming a healthier appearance, and pus of a good quality was secreted. The quinine was now obliged to be discontinued from an attack of rheumatism of the left side, but was afterwards administered with good effect, notwithstanding an abscess formed in the left inguinal region, carrying in its train a swelling, and paralysis of the leg of that side. Emollient poultices were applied, but the œdematous swelling progressed, extending over the entire of the abdominal integuments. The process of cicatrization, which had reduced the wound to the size of a two-franc piece, was also manifestly arrested. By the aid of tonics, antiseptics, and a nutritious regimen, the œdema disappeared in the course of eight days; sleep and appetite now returned, her strength augmented, cicatrization recommenced, the quantity of pus daily diminished, and there only remained a few cutaneous ulcerations in the neighbourhood of the rupture, which were soon healed by the application of the Nit. Argenti. In one month after she was so far re-established in health as to be able to quit her bed; and in fifteen days more, the wound was reduced to the diameter of a one-franc piece.

She was now enabled to engage in domestic affairs, and walk for half an hour each day. On the 5th of October cicatrization was complete, she felt no pain, and was fast regaining her *embonpoint*. The catamenia appeared in six weeks after the accident, and again towards the end of October without pain, but less abundant than the first time. She now left the hospital.

This extraordinary case is so much the more interesting, as it is perhaps the only one in the annals of medical science. One exhibiting some analogy is related in an old English work, little known, published by the Society of Edinburgh.

The translator, not without some difficulty, from the indefinite description given of this work, found the paper referred to in vol. ii. of the "New Edinburgh Essays," p. 338, published in 1756. It was read before the Society by Alexander Monro, sen., and is thus given:—

"In April, 1736, Elspet Grant, in the parish of Moy, being with child, took her labour pains. After they had continued three days with the child in birth, two cracks, as if the rafters of the house had broke, were heard about the sick wife, and her belly was rent from near the navel, with a squaint downwards, and to the left side to near the share bone. At this rent the child came into the world, the after-burthen was brought away, and the entrails were seen. This woman recovered."

Dublin Journal of Medical Science, Jan. 1845, *p.* 489.

135.—*On Pressure on the Abdominal Aorta in Cases of Uterine Hemorrhage.*—By M. Chailly. [In cases of hemorrhage after delivery, even a temporary arrest of the danger may be of the utmost importance, and as an auxiliary to the usual means employed, pressure on the abdominal aorta before its bifurcation, a practice to which, perhaps, too little attention has hitherto been paid in this country, is well worthy of trial. M. Chailly advises as follows:—]

While the accoucheur is making frictions on the hypogastrium, he should administer ʒj. of ergot in a small quantity of water. At the same time, he directs the assistants to place cold compresses on the legs and thighs; and if the frictions should be insufficient to bring on uterine contraction, he must not wait for the action of the ergot, but immediately, with the extremity of the fingers of one hand, press on the abdominal aorta before its bifurcation; and he thus exerts with this hand, on which is superposed the other, a compression which, when well made, almost invariably arrests the hemorrhage.

This means, which we owe to M. Baudelocque—nephew, and whether he originated it or not matters little—is one of the most precious discoveries with which the obstetric art has been enriched.

M. d'Ornelas has quite recently cited in his thesis several cases of success obtained by this remedy.

My father had recourse to it once with the happiest result: and in twoins tances I have also been enabled to preserve the lives of two women, who certainly would have died had it not been for this valuable agent.

In one of these patients I made use of this compression for nearly two hours, when M. P. Dubois, whom I had sent for, arrived and witnessed the fact.

The effect produced by this compression is so manifest, that the flow of blood is immediately checked; and if, by a movement of the patient, the aorta should escape from the hand, the hemorrhage recommences immediately.

This compression, as is well understood, is not a curative remedy; but it permits us to gain time, a result the more important in an accident so fearfully rapid as uterine hemorrhage.

Finally, whilst this compression is faithfully persevered in, and the flooding is thus checked, we must employ, with activity, the other means which are calculated to arrest it definitively. Cold water should be thrown into the rectum; two or three drachms of ergot, in two or three doses; the cold compresses to the legs and thighs should be constantly renewed; and an assistant should make continued frictions to the uterus.

The compression of the aorta will be the more easy in proportion as the patient is less loaded with fatty matter; but, even when the female is very corpulent, it still may be practised with facility and successfully. In fine, immediately after the expulsion of the fœtus, the uterus descends, and there is a space between the fundus of this organ and the intestines, which, for a period of nine months, having been pressed up towards the superior portion of the abdomen, do not immediately after the delivery resume the place they occupied before pregnancy. It is into this space that the hand passes with facility for the purpose of making the compression.

It is sometimes extremely fatiguing to continue this compression, and we are occasionally obliged to be relieved by an assistant.

British and Foreign Medical Review, April 1845, *p.* 421.

136.—*Treatment of Chlorosis.*—By SAMUEL ASHWELL, M.D. [Dr. Ashwell recommends iodide of iron in cases of chlorosis, attended with strumous habit of body. The form in which he employs this remedy is the following:—]

℞ Ferri iodidi, gr. xvj.; tinct. calumbæ vel gent. co. ℥j.; aquæ distillatæ, ℥vij. ft. mist.; sumat cochl. ij. magna bis terve quotidie.

The supposed frequency of affection of the os and cervix uteri in connexion with leucorrheal discharges, which has been regarded as furnishing one of the most valid reasons for a far more general use of the speculum than is accordant with English feelings, is regarded by Dr. Ashwell as a mistaken notion. The cervix uteri indeed is occasionally soft, and the os patulous, or, at least, these tissues are all found to be relaxed. In several instances in which he used the speculum, the cervix was pale; in more acute cases slightly red; twice he found it of a deep crimson hue; but he never observed either erosion or ulceration, except when there was suspicion of venereal taint.

Inflammation of the cervix uteri, so ably described by Sir C. Clarke, is conceived by Dr. Ashwell to be of very unusual occurrence. He states that "out of nearly 1,000 cases of sexual disease, treated at Guy's, I find that inflammation of the os and cervix has happened only twenty times." This fact is important, for many practitioners, we believe, form an exaggerated estimate of the frequency of its occurrence.

British and Foreign Medical Review, April 1845, *p.* 346.

137.—*Vaginal Speculum.* [Dr. Warden suggests that the shape of the ordinary speculum should be altered—that a slice should be cut off the end, and that it should be more uniform in its diameter.]

The advantage, says he, of this arrangement, amounts to little short of all that is supplied by my more complicated instrument. When the uniformly cylindrical speculum ordinarily employed is introduced into the vagina or rectum for observation of unknown disease, the mucous membrane is pushed in a confused heap before its extremity; and in the same manner, when the instrument is being withdrawn, the passage puckers and closes with all rapidity after the receding instrument, so as completely to prevent an extended, flat, and distinct view of any portion of the mucous walls which may be the seat of disease. By the simple abscission of an oblique slice of the speculum, an extended lateral view of the passage in every part of its walls may be brought into the direct axis of vision, and is thus favourably placed for the application of whatsoever topical treatment may be necessary.

Lond. and Edin. Monthly Journal of Medical Science, Dec. 1844, *p.* 1056.

[Mr. Moss, of Dublin, has invented and constructed a new form of speculum for examining the vagina and rectum; the os uteri, however, cannot be inspected by means of it.]

It consists of a cylinder about five inches in length, tapering towards the extremity, and composed of steel wires of considerable strength. A plug of polished wood exactly fills the cylinder, and contains grooves for the reception of the wires, so that the instrument, when filled with the plug, presents a perfectly smooth surface. On introducing it into the vagina, it would be found to distend that cavity, and, by then withdrawing the plug, any desired application might be made to the vaginal mucous membrane through the interstices of the wires; this membrane being sufficiently distended to prevent its getting between these interstices. The instrument had, no doubt, some disadvantages; the mucous membrane might occasionally fall into the intervals just described, though in any of the instances in which he had used the speculum, this had occurred only to a very slight extent; the instrument is rather small, too, for the vagina of women who have borne children, and rather too large for examining the rectum; it might, however, be found useful in the operation for fistula in ano. Mr. Moss has found this instrument very much superior to the old glass one, in using which it is not possible to make applications to the whole surface of the cavity without withdrawing it; the folds of the mucous membrane then fall together, rendering it impossible to apply caustic or other such remedy to any fissures that may exist; while the instrument now exhibited keeps the cavity distended, and is much easier of introduction than the glass one, though not so readily withdrawn.

Dublin Medical Press, April 16, 1845, *p.* 242.

138.—*On the Position of Women in Labour.*—In France and in Italy, indeed on the Continent generally, women are not delivered on their side, as in England, but on the back. M. Angeloni, who originated the discussion, is a partisan of the lateral position, but nearly all the accoucheurs present declared against his views. Singularly enough, both parties brought forward the example of English ladies who had been placed both ways, and preferred, some the lateral, some the dorsal position.

Lancet, Jan. 11, 1845, *p.* 29.

139.—*Matico in Uterine Hæmorrhage.*—Mr. Butler, in two cases of abortion, has used the matico in infusion, internally and by injection, with the best results. In one of these cases, the patient was a woman fifty years of age, the mother of a large family, and who aborted at an early period, in consequence of violence. Troublesome hæmorrhage remained for some time, resisting all the usual means of treatment. The matico speedily effected a cure. In another case of early abortion, the same plan was also successful, after other means had failed.

Lancet, Jan. 18, 1845, *p.* 73.

140.—*Effects of Regimen in Checking the Growth of the Fœtus in Utero.*—[In a review of M. Moreau's work on Midwifery, in the Edinburgh Medical and Surgical Journal, we have the following remark:]

In women the diameter of whose pelves measures less than three and a half inches, M. Moreau strongly urges the necessity of subjecting them to what he terms the debilitating regimen; and he relates a very instructive case in which, by following this plan, the child was so small at term as to be delivered naturally and alive, though the diameter was only three and a quarter inches. She had previously been delivered by instruments, of a dead child, and subsequently fell a victim to neglecting the employment of the debilitating regimen on her next pregnancy. The advantages of this regimen we have seen in two remarkable instances which fell under our care. It had the effect in both cases of so preventing the growth of the child, that they were fully as small at term as if they had only been at the seventh month. We are aware that Dubois and many others do not believe that dietetic means can have any effect on the growth of the *fœtus in utero;* and they chiefly found their opposition to the facts stated by Baudelocque, Merriman, and Moreau, on the circumstance, that women labouring under phthisis or debilitated by antiphlogistic regimen, in consequence of inflammatory attacks, are delivered of as large children as other women. This is no argument at all against facts. Besides the woman debilitated by antiphlogistic regimen in consequence of inflammatory attacks, is only temporarily subjected to that severe regimen necessary to prevent the full growth of the fœtus; and it is a known fact, that phthisis, even in its last stages, is temporarily arrested by the occurrence of pregnancy, and that the appetite is often perfectly voracious.

Edinburgh Medical and Surgical Journal, Jan. 1845, *p.* 156.

141.—*On the Preservation of the Ergot of Rye.*—It has been ascertained that the most carefully gathered ergot soon loses its therapeutic properties, if it be kept in a damp place, or exposed to the contact of the air and light. M. Victor Legrip of Chambon, in a recent number of the *Journal de Chimie Médicale*, advises the following method for preserving it in a good condition for several years.

1st, Reduce the recent ergot well dried into powder.

2dly, Expose the powder to a temperature of 45 or 50 degrees, (centigrade), in order to dry it thoroughly and quickly.

3dly, Put it into glass bottles not exceeding a hectogramme in size, and seal hermetically.

4thly, Withdraw it from the action of light, by shutting it up either in a dark place, or by covering the bottles with black paper.

If the results obtained by this process be really as advantageous as the author announces, we cannot too soon direct the attention of pharmaceutists to it; for it too frequently happens, especially at the latter part of the season, that the officinal preparations of the ergot are so deteriorated, that it is impossible to calculate with certainty upon their effect.

Lond. and Edin. Monthly Journal of Medical Science, April 1845, *p.* 329.

142.—*Effects of Electro-Magnetism in Suppressed Menstruation.*—By Dr. Collins. A female, æt. 35, unmarried, rather delicate constitution; her menses were stopped by taking cold, some seven months before I first saw her. I tried all the usual remedies prescribed in such cases, but I did not succeed in bringing about the desired effect. I had been using the electro-magnetic machine in some other cases with the happiest effects; and I therefore was induced to use it in this case, in which it succeeded most perfectly. I applied the but-tons connected with the machine over the region of the womb, holding one on the lumbar region of the spine, and the other in front over the pubic region; using the negative and positive wires alternately to the spine and abdomen. I continued the remedy five days, from five to ten minutes each day, when her menses were fully re-established. I have used it in rheumatism with good effect.

Lancet, Jan. 25, 1845, p. 91.

[On the subject of electricity, as applied to uterine affections, we may refer the reader to a remark of Dr. Ramsbotham, in his lectures in the Medical Gazette, April 19th, 1834. This gentleman claims the priority in recommending electro-magnetism in cases of uterine hemorrhage, as used by Dr. Radford, of Manchester. In both Dr. Ramsbotham's editions of his work on obstetric medicine is the following sentence:—"I am inclined to think that electric shocks, particularly derived from the galvanic battery—would excite the flagging powers of the uterus under labour, and, perhaps, even induce action *ab initio*. This is a means, however, of which I would not in the present state of our knowledge recommend a trial; and I only judge by analogy, in consideration of the influence the electrical fluid exerts over the nervous system generally, and through that system over the muscular fibre."

Dr. Radford, however, is entitled to the credit of first illustrating the truth of this idea by actual practice.]

RETROSPECT.

There are few, if any, parts of the system which have given rise to more difference of opinion or more error of diagnosis than diseases of the nervous system. Diseases in distant parts of the body produce such a variety of sympathetic affections through the medium of the system of nerves, that unless the practitioner be fully aware of the anatomy and physiology of these parts, he will be constantly liable to mistakes. These observations apply especially to the subject of reflex action so ably expounded by Dr. Marshall Hall: and they are also applicable to some interesting remarks by Mr. Wilkinson King on the cause of convulsions, which we shall shortly allude to. It has been ascertained by an experiment of Whytt, that opium acts on the nervous system of a frog when taken into the stomach, even although the heart may have been taken out and the circulation thus stopped. This seems to prove that the poisonous effects are not owing to the poison being taken into the circulation and thus conveyed to the nervous system, but rather to a direct effect on the nerves themselves. We are constantly meeting with cases in practice in which the direct effects on a nerve, whether produced by a poison or by irritation, are of the most curious and interesting description, and we are persuaded that the diagnosis of diseases will soon be carried to much greater perfection than it has hitherto arrived at, by means of accurate discrimination of the nervous symptoms. Our chief means of diagnosis is *pain*. It is highly necessary therefore to know how pain may be produced. In the words of the British and Foreign Medical Review, "Pain may be produced in various ways. First, the termination of the sensitive nerves may be so altered by mechanical or physical changes, that pain shall be excited. Thus act the capillary tension in inflammatory affections, and the disruption of the molecules of the nerve by pricking, tearing, burning, &c. But the change thus begun at the terminating molecule must pass on along the trunk of the nerve from molecule to molecule, until it arrives at the central axis; the whole chain is brought into operation. That is one and the most common mode in which pain is produced. But the painful change may be commenced in any part of the course of the nerve; either on the fibril or within the ganglia through which it passes: in this case the painful sensation is referred, not to the point at which the change commences, but to the point at which the nerve terminates. It is thus that persons who have had a limb amputated, and subsequently a morbid growth on the cut end of the nerve, have experienced the most excruciating neuralgia and painful convulsion, apparently in, and referred to, the skin and muscles of the limb long since severed from the trunk."

And again, in the various cases of tic douloureux and neuralgia, we should be constantly liable to attribute the seat of mischief to the part where the pain existed, unless we were aware of the fact that the disease or irritation may be in a distant part of the nervous cord, and perhaps in some distant ganglion through which the nerve passed. Then again, the nerve may not be affected to such a degree as to cause pain, but may "magnify ordinary impressions and render them painful, thus acting as a *physiological magnifier*." Thus the slightest touch on the surface of a neuralgic subject, will sometimes cause exquisite pain and reflex action; and the functions of the cerebro-spinal axis may be altogether so exalted, that any irritation, either at the extremities or in the course of the nerves. may convey such a powerful effect to a part already so exalted in its functions, that the reflected action may even be convulsive. In a most interesting article on this subject in Dr. Forbes's Review, the reviewer goes on to state in connection with these views, that in spinal irritation the change is probably in the capillary circulation, either of the cerebro-spinal axis or of the ganglia of the sympathetic, or ganglia of the posterior spinal nerves, or of the fibrils of the nerves themselves. We know of no subject more interesting than the investigation of neuræmic diseases, and we have to thank Dr. Laycock of York, for some valuable information on this subject. (1.*)

Mr. W. King's paper on the source of convulsions throws some further light on this interesting subject. He points out the intimate connection which exists between the *pons varolii* and the whole muscular system, by reminding us that at this point all motor tracts converge, and by one thrust into this portion we may stir up every muscle of the body. Disease may exist and advance to a considerable extent in some portions of the brain without producing very evident symptoms, but as soon as the mischief approaches the pons varolii, the case becomes no longer doubtful. A tubercle may increase to a considerable size without exciting suspicion till it approaches this part, when convulsions more or less severe will come on. (4.)

There are few medicines which have excited more interest within the last year or two than the Indian hemp, and few medicines of known medicinal powers have so often and so signally failed to fulfil the hopes entertained respecting it. The reason of this seems to be that the preparations which have been used by different experimenters have not been alike. One man has used the simple tincture of the *seed*, another the tincture of the *resin*, and another the resin itself. Again, one preparation may be very useful in India, but the same, when brought to this country, may be so deteriorated as to be useless. Dr. O'Shaughnessy may have found the resin of the plant powerful in India, while it is necessary, when used in this country, to make a tincture of the resin, prepared in India from hemp, collected at the proper season. Mr. Donovan, from numerous experiments on his own person, and on others, especially recommends the *tincture of the resin* as superior to all the other preparations of this drug. The resin itself seems to be totally insoluble in watery liquids, and it should therefore be made into a tincture. The pilular form will often pass undissolved through the alimentary canal. This is corroborated by the fact that Mr. R. O'Shaughnessy found that one drachm of the tincture, which contains three grains of the resin, had a much more powerful effect than five grains of the latter. Mr. Donovan prepares his tincture of the resin by mixing two grains of the resin with one drachm of rectified spirit; and of this he gives at first from eight to fifteen minims in a very small quantity of proof spirit. If the draught be mixed with water, the resin will be rapidly precipitated and adhere to the vessel, and will thus escape being swallowed. It may, however, be mixed with water if it be swallowed *instantly* and before this change can be accomplished. It is better, however, to direct the patient to take the draught from the small bottle of spirit in which it is contained. (2.)

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* The figures at the end of this and the other paragraphs in this retrospective summary refer to the articles in the body of this work where the subjects are treated of more at length.

Within the last six months numerous cases of tetanus have been published, in which the Indian hemp was used with very variable results. We can easily account for these, after reading Mr. Donovan's paper on the subject. In the first case which we have recorded, Mr. Miller used the tincture of the hemp and the resinous extract. It was in a girl seven years of age, labouring under traumatic tetanus. She took three grains of the resinous extract every half hour—a full dose for an adult, under ordinary circumstances, without repetition. Narcotism was usually produced by a few doses, but only continued a short time, when the doses were recommenced.

Under ordinary circumstances, Mr. Miller doubts the efficacy of this medicine as an anodyne and hypnotic, and considers that its chief value rests in its power to subdue inordinate muscular spasm. We suspect that if the experiments of Mr. Donovan had been known to Mr. Miller at the time, he would have preferred the tincture of the resin instead of the resin itself, not only on account of its more certain effects, but also for its easier mode of administration. In a case of idiopathic tetanus in Guy's Hospital, Dr. Babington prescribed the tincture of the extract in the proportions of three grains to half a drachm of rectified spirit, to be given every half hour. The effects were variable, but upon the whole beneficial. This patient took in the space of five days 248 grains of the extract, although a single grain produced powerful effects in a healthy individual. Five doses of three grains each were given before any good effects were produced, and after that five grain doses were administered every two hours for some time. This case shows that in cases of tetanus we must not be deterred from administering very large doses if smaller ones fail.

Another authority on the use of this drug is Dr. Clendinning. He disagrees with Mr. Miller, and asserts that he has found it to be a valuable hypnotic and anodyne, both conciliating sleep and lulling pain: and another valuable quality is its power of allaying cough without the pernicious effects of opium. We protest most seriously against the baneful practice of giving opium in one form or another in bronchial affections, with the view of allaying cough. It may, indeed, allay this symptom, but it acts most prejudicially upon the mucous membrane, producing a stoppage of secretion and an increase of congestion. We hope, however, that the resinous extract of Indian hemp may afford considerable relief in a most troublesome class of bronchial disorders, in which the practitioner is incessantly called upon by his patient to give relief, which, by opium, he can only do by protracting the disease. In articular rheumatism, or severe bronchitis, we may be able, by means of hemp, to put the patient at once under the double influence of a diuretic laxative and an anodyne anti-spasmodic; a saline solution, with or without colchicum, correcting the blood and secretions, unimpeded by the narcotic, whose whole influence appears to be expended on the tissues, seats of pain and irritation. Another class of cases in which we may find this medicine useful is that of low fever, by securing the enjoyment of that great restorative—tranquil sleep—without any neutralizing inconvenience.

In the treatment of another case of tetanus, by Mr. Stapleton, the effect of all remedies seemed perfectly useless; and this gentleman had recourse to profound *intoxication*. Under any other circumstances we should say that this remedy was improper, but in the case alluded to it was successful. Mr. Stapleton provided himself with a mixture of alcohol and water in equal parts. He gave six ounces of this mixture at once, and four ounces more in a quarter of an hour. In twenty-five minutes the patient laid on his side and fell into a profound sleep—every muscle was in a state of quiet relaxation, and the sense of pain had vanished as if by a charm. For seventy-two hours he was kept under the influence of the remedy: when it was withdrawn the tetanic symptoms returned and were as quickly relieved, when the alcohol was again resorted to. The relief, however, was only temporary, as the patient eventually died. (5.)

Dr. Proctor has advanced an ingenious hypothesis respecting the use of the sympathetic nerve, and its influence on various diseases of the abdominal and pelvic viscera. He first points out the fact, that nerves in general will accompany arteries through a great distance without communicating any twigs to them. It is not so, however, with the sympathetic, which he states to be emphatically the nerve of the arterial system, enmeshing and penetrating the vessels on every side. He considers that it is for the purpose of regulating the tonic contraction of the arterial system and for nothing else. He argues that as there is hardly an organ in the body which is not known to have a moving and directing power, it is not possible that such an important system as the arterial should be without a similar power.

And, as we behold the sympathetic so intimately connected with this system, we should *à priori* expect that its influence on its functions was especially important. From the experiments of several physiologists, it has been proved that the circulation is independent of the cerebro-spinal system, but it has never been shown to be independent of the sympathetic system. Wherever a large supply of blood is called for, either regularly or at sudden but interrupted intervals, as by the head, stomach, and organs of generation, &c., we find a proportionate development and supply of the sympathetic system of nerves. So far the hypothesis of Dr. Proctor may or may not be correct—time and facts will test the value of his opinions. We should hesitate, however, in adopting the practice which he founds on these views. He considers that as the sympathetic nerve is the cause of tonicity in the various branches of the arterial system, so when any organic congestion takes place it may arise from a want or irregular distribution of power in the nervous energy of the ganglionic system, and for the overcoming of the disease he would rather trust to the stimulation or soothing of the nerve than to any particular action to be produced in the organ itself. For this purpose he would often trust in the first instance to stimulants and tonics to restore the nervous energy, when we should previously have recourse to depletion. (7.)

Perhaps the electric current, as explained by Matteucci, would be of use in Dr. Proctor's practice to restore the lost energy of the nervous system of any particular part. Matteucci thinks that the electric current may be of great use in some cases of paralysis and tetanus. It is well known that an electric current transmitted through a nerve for a certain time destroys its sensibility. It will regain its sensibility by repose, but it has been ascertained by Matteucci that if an electric current be passed along the nerve in a *reverse* direction the sensibility will be restored in a much shorter time. Another circumstance noticed by Matteucci is this—that if the nerve of a living animal be submitted to the passage of the electric current, renewed at short intervals, tetanic contractions are excited, and if the experiment be continued for some time, the nerves entirely lose their sensibility. These facts may be usefully applied to some cases of paralysis, and it is possible that passing the electric current in a reverse direction to the usual course of nervous influence, may in some degree hasten the restored sensibility of those nerves which are only functionally disordered. Here, however, we must be aware that the current in nerves of sensation and nerves of motion would be in opposite directions. Again, we must remember that to continue the electric current too long would only increase the evil. (8.)

The most opposite plans of treatment occasionally succeed in delirium tremens; one practitioner succeeds by suddenly abstracting all the ordinary stimulants and pouring in large doses of opium instead; another succeeds by withdrawing the stimulants gradually, and giving more moderate doses of opium; and others employ no opium at all, or a very small quantity. It is certain that the powers of opium are very available in this disease, and will often be highly prejudicial if given too early. When the acute symptoms have abated its effects will be best ascertained. Dr. Morehead, in common with many others, believes that the disease generally runs a certain course, and requires a given time to subside, and that the great art of treatment consists not in forcing sleep by large doses of narcotics, but in conducting the patient through the period of delirium by withdrawing all sources of irritation, by moderating or sustaining the circulation, and by calming the nervous excitement. For this purpose we may chiefly rely on the cold affusion, tartar emetic combined with opium, and the exhibition of stimulants in moderate quantities. The combination of tartar emetic with opium, as recommended by Drs. Law and Graves, of Dublin, forms one of the most powerful remedies which we possess, and has not yet been sufficiently appreciated by the profession. The tartar emetic may be given either to nauseate or not, according to the urgency of the case and the degree of prostration already existing. We must remember that in many cases, instead of having high fever and congestion there is prostration and exhaustion from the commencement; in which cases it would not be good practice to give tartar emetic, but, on the contrary, gentle stimulants. Where the case is, however, of a sthenic character, we shall find that half-grain or even grain doses of tartar emetic, with half a drachm of laudanum every hour, will constitute a very powerful means of subduing the excitement and conducting the patient through the earlier stages. Of course the antimony must not be continued too long. The combination of antimony or ipecacuanha with opium was a remedy well known in the last century. Dr. Curry mentions the fact as well known in his time, that in this combination each ingredient counteracts or modifies very remarkably the effects of the other—the opium preventing or subduing the emetic properties of the antimony, and the latter suspending the stupefying power of the opium. (10.)

In giving the outlines of the treatment of asphyxia as described in Mr. Erichsen's paper, it will not be necessary to do more than refer to those points which may be called for in practice. It may be useful to remember that asphyxia may be caused or attended by two circumstances, 1st, When the impression is first made on the nervous system causing *syncope* rather than real asphyxia. In this case the heart will continue to pulsate feebly for some time, sending the blood through the lungs slowly to consume the remains of the oxygen which there exists; this state finally terminating in real asphyxia, the blood being no longer able to stimulate the heart to action. This may in some measure resemble hybernation, and accounts for those cases of recovery after a submersion of four minutes and *upwards*. The face is pale and bloodless, the features sunk and contracted, and the eyes partially or entirely closed. 2nd, When the impression is first made on the respiratory and circulating systems, the brain and medulla oblongata being only secondarily affected. In this case the blood rapidly becomes venous, and the heart seldom continues to pulsate above four or five minutes: the face is livid and bloated, the lips swollen and the eyes open. But in actual practice it is often impossible to draw these distinctions, both kinds running into each other. It is obvious that when a distinction of causes is evident, "in the one case we should endeavour to re-oxygenize the blood; in the other, to rouse the sensibility of the brain and medulla oblongata."

It appears from the reports of the Royal Humane Society, that when a person has not been submerged above four minutes, he can generally be restored by the measures which are generally adopted at the Receiving House in Hyde Park—measures which do not seem to act directly on the heart, such as the warm bath and friction, but only as general stimulants to the system, equalizing the circulation if it be still going on. These measures consist chiefly of a hot bath at about the temperature of 100° until the natural warmth is restored, the employment of brisk friction, and in passing ammonia to and fro under the nostrils. Mr. Erichsen suggests the addition of repeatedly sprinkling the face with cold water while the rest of the surface is in the water, and also that the lungs should be inflated by "compressing the chest and abdomen so as to expel the vitiated air, and then allowing them to recover their usual dimensions by the natural resiliency of their parietes, a small quantity of air will in this way be sucked in each time the chest is allowed to expand." This treatment is very judicious when the patient has only been immersed for four minutes; but when above that time other means ought to be used. Mr. Erichsen first recommends that a certain degree of warmth (from 85° to 90°) be applied, but not the high temperature of 98° or 100°, which is too often used. This advice is agreeable to the experiments of Edwards, who has proved that the higher the temperature of the body, whether natural or artificial, the more oxygen is consumed—and therefore in a case of asphyxia, a low or moderate temperature will certainly be safer than a high one. Moreover the hot bath is not so favourite a mode of applying heat as it used to be. Both Dr. Kay and Dr. Carpenter disapprove of it, considering that as the skin is a valuable medium of conveying oxygen to the blood, the bath renders this adjunct comparatively useless. The hot-air bath is therefore a better mode of accomplishing the purpose; and with this, friction in various ways may be better applied than when the hot bath is used. There are two facts which seem to be so far established, viz., that artificial respiration cannot cause reaction of the ventricles of the heart when they have entirely ceased, but that by means of this operation the circulation through the lungs themselves can be re-established to some extent after it has entirely ceased, and after they have become congested with asphyxial blood. By means of artificial respiration, however, Mr. Erichsen has several times observed the *auricles* to contract regularly and forcibly. This process ought therefore never to be neglected, as it can do no harm even if the action of the ventricles has ceased, and, by supplying the left side of the heart with a fresh quantity of oxygenated blood, it is one of the most likely means of exciting it to increased action. Now the experiments of Mr. Erichsen clearly prove that even when the lungs are loaded with asphyxial blood, artificial respiration is able, in some measure, to decarbonize it, and to excite the pulmonary circulation to some degree of activity, even when that circulation has ceased. Perhaps the best mode of causing artificial respiration is by compressing the chest and abdomen and allowing them again to expand—a certain quantity of air is sucked in, and by the well-known law of the diffusion of gases, if fresh air be only taken into the larger bronchi, it becomes rapidly diffused. In several experiments it was found that even when the contractions of the heart had entirely ceased, they could be re-excited by making use of oxygen gas in the inflation of the lungs; an important fact to be known. It seems evident that if we had a large and ready command of this gas many lives might be saved. Dr. George Wilson, Lecturer on Chemistry, Edinburgh, points out a method by which this may be accomplished. It consists in a modification of the well-known process of preparing oxygen from chlorate of potass. It consists in mixing the chlorate with a tenth of its weight of the black oxide of manganese, the black oxide of copper, or of certain other oxides, and applying heat as is done in the ordinary process with the unmixed chlorate. Dr. Wilson states " that with a small glass retort heated by a single spirit lamp, containing the chlorate of potass mixed with a tenth of its weight of oxide of manganese, it is easy to obtain 200 cubic inches of oxygen within four minutes of the first application of the flame. The gas begins to come off in a few seconds after the light is applied, and literally gushes in a full stream till the whole is evolved. This subject has been discussed in the recent part of Taylor's Scientific Memoirs. It has been estimated that 100 cubic inches of air may be thrown into the lungs each time, so that if 300 or 400 cubic inches of oxygen could be supplied each minute, the process could be kept up artificially for a considerable time. But we suspect that a much less quantity would be very useful and even sufficient. Owing to the diffusibility of gases it would be sufficient to force a quantity of oxygen into the larger tubes of the lungs: this would soon be diffused through the remotest air cells, and in a much more rapid manner than is generally supposed. The mixture of chlorate of potass and metallic oxide, should be kept ready for use at all public hospitals, lying-in institutions, police offices, and wherever cases of asphyxia may be readily conveyed. " There should also be provided glass or metallic retorts, with suitable arrangements for heating them, and one or more gas holders to receive the gas." It would be advisable " to pass the gas through an intermediate vessel containing a little caustic potass in solution, both to detain any carbonic acid resulting from the presence of combustible matter in the original mixture, and to arrest any of the latter carried over mechanically in the current of the oxygen." A complete apparatus for this purpose would be especially useful in lying-in hospitals. It might also be useful in cases of poisoning by opium. (13.)

A great deal has been said and written on the incurability of consumption, but if we may rely upon the opinion of M. Boudet, we must conclude that many cases of this disease, even in some degree of advancement, have recovered. In his post-mortem examinations he discovered that numerous cases of tubercles in the lungs or bronchial glands had become innocuous, and in many had wholly disappeared. (16.)

The views of different medical men on the nature and treatment of hooping cough seem to be exceedingly variable. Many different opinions have been published on this subject within the last few months. Most practitioners seem to agree that in the early stages of the affection, we have inflammation of the lining membrane of the air tubes, which may extend more or less throughout the whole lungs; and hence, whether we regard it as of a specific character or not, the treatment in the first place ought to be more or less antiphlogistic, as in the early stage of bronchitis or pneumonia. The par vagum seems to be implicated in the affection, and the irritation of this nerve may account for some of the most troublesome symptoms. When the acute symptoms have subsided, the great object of practice is to subdue irritation and improve the general health; and it is in this stage that such a variety of remedies have been proposed. Dr. Waller gives the twelfth of a grain of extract of belladonna three times a-day to a child four years old. We suspect that this will prove an uncertain remedy, and not free from danger in very young children. Opium ought never to be given even as a palliative, as its remarkable effects in causing congestion of the mucous membrane of the lungs will inevitably prolong the disease, however pleasing the first effects in allaying the cough may be. It is possible, however, that the counteracting or neutralising properties of strong doses of tartar emetic or ipecacuanha, may render this a more warrantable remedy in extreme cases. The irritating cough may frequently be relieved by conium, hemlock, or hydrocyanic acid; and we ought never to forget the remarkable property of the alkaline medicines, as potash, of relieving the irritability of mucous surfaces. When a great quantity of mucus is secreted, Dr. Golding Bird recommends alum to be given. This should only be used, however, in the second or nervous stage characterised by nervous cough with bronchial flux, unaccompanied by febrile action: or we may probably find that the acetate of lead, as recommended by Dr. Henderson, (see Vol. I. Article 32) may here be useful, where the secretion is excessive. Dr. Golding Bird, however, finds alum the most efficacious; he gives it in doses of from two to six grains in children from one to ten years old, repeated every four or six hours. Thus, for a child of two or three years, he gives two or three grains of alum with half or a whole grain of extract of conium every six hours.

Tannin is recommended with a somewhat similar motive. It may be given, after the acute stage is past, in doses of a quarter or half a grain every two hours with a dose of conium. Sir G. Lefevre recommends musk, as having some specific influence in the spasmodic attacks of this disease. He gives it in doses of a grain three or four times a day; and states that in a few days it will often arrest the most convulsive species of coughing. (17.)

We think that inhalation of the fumes of nitrate of potass in spasmodic asthma, a disease so intractable under ordinary remedies, is well worthy of trial. The worst that can be said of it is that is perhaps too cheap and simple, and too easy of application. (18.)

Pulmonary disease, it is well known, may be caused by anything that tends greatly to lower the tone of the system and exhaust the strength. Two cases which strikingly illustrate this are given by Dr. Chapman of Philadelphia, and they should teach us always to examine carefully into the original cause of the malady in a phthisical patient, or we may lose a case by treating that as dependent upon tubercles which may be merely a secondary complaint. In one of Dr. C's., the pulmonary disease was consequent on gastro-intestinal irritation produced by worms; whilst in the other, the alimentary disorder by which symptoms apparently resembling confirmed phthisis were produced, was caused by the swallowing of a pin, on the elimination of which by a small abscess in the groin, the symptoms subsided and the patient recovered. (19.)

It may seem almost heresy to oppose the long established opinion that removal to a warm climate is always likely to prove of benefit in cases of phthisis and other pulmonary diseases, but we think that it is too indiscriminately advised by medical men, who do not reflect or forget that death will be likely to occur sooner there than in a colder climate; though we are not prepared to go quite so far as the Baron Larrey, who terms it "a fatal error," "a pernicious prejudice," because we think that where the disease is not fully established, removal to a warm climate, by withdrawing the chief irritant of the lungs, affords the best chance of permanent recovery. (21.)

A mode of treatment of malignant sore-throat of very powerful efficacy has been discovered by Dr. James Arnott. It consists in the administration of powerful and repeated doses of emetics; the effect of which is at first to produce great exhaustion, followed by manifest relief of all the other symptoms. (23.)

Dr. Becker has found extract of green walnut shells of great efficacy in congestion of the tonsils. The mode in which he uses it is in the form of a solution of the extract of one part to fifteen of distilled water, to be applied externally with a brush. The rationale of the action we do not pretend to be able to give. (24.)

It seems to be a contradiction to cure acidity of the stomach by the administration of vegetable acids; but such seems to be the case in some peculiar and obstinate affections of this organ. In our tenth volume we pointed out this remedy, as used by Dr. Tracy, of Ohio, not only in his own person but also in other cases. Dr. Chapman, an experienced physician of Philadelphia, refers to the same thing in his late work on the diseases of the thoracic and abdominal viscera. He has found occasionally the most discrepant sorts of nourishment agreeing with dyspeptics. One patient was cured of his dyspepsia by drinking *sour beer*, another by living exclusively on *raw turnips*; other cases are related in which *sour pie cherry* and *vinegar* were used. Dr. Tracy states that the vegetable acids will be successful when the alkalies have failed, and for general use he recommends lemonade or lemon-juice. (26.)

In cases of obstinate constipation, and even complete obstruction of the alimentary canal, it would be very satisfactory to be able to ascertain with some degree of precision in what part of the bowel the obstruction exists. Some cases are related by Dr. Barlow, in which stress is laid upon the quantity of urine which was excreted, as a means of diagnosis. For example, in one case the obstruction was found to be in the colon, and in another at the upper portion of the jejunum;—in the former case the urine was copious, and in the latter almost suppressed. When we remember the sources whence the urine is derived, we might be led *à priori* to expect that these consequences would result from the above circumstances. The urine is derived from three sources:—" 1. The water taken into the alimentary canal with the ingesta. 2. Those soluble substances, which are taken in the same way, and which do not undergo decomposition in passing through the extreme circulation, e. g., the neutral salts of metallic bases with mineral acids, which appear to act as stimulants to the kidneys. 3. Those lower organic products which are formed in the extreme circulation, or, in the phraseology of Liebig, the products of the transformation of tissues, e. g., urea, urates," &c. It follows, therefore, that if any one of these processes be interrupted the urine will be more or less depressed; and if the liquids taken into the stomach only pass down as far as the jejunum, or are rejected almost as soon as taken into the stomach, which will often be the case where the obstruction is high up near that viscus, there will not be the sufficient quantity of liquid to excite the action of the kidneys. In cases of obstruction there will often be other important symptoms to indicate the seat of mischief. When this is low down in the large intestines the pain will probably not be severe at first, whereas when nearer the stomach it will exist almost from the first; when low down the sickness will not come on near so early as when high up; then, again, when in the colon the abdomen will suffer much more from distention than when in the small bowel. All these circumstances ought to be well weighed in these important and sometimes mysterious cases. (29.)

Mr. George Robinson, from experiments which he instituted to ascertain the cause of the appearance of albumen in the urine, has found that " obstruction to the return of blood through the renal vein," gives rise to the escape into the urinary passages, not only of liquid albumen and blood, but also of coagulating lymph or fibrine. Similar results were obtained when an *increased* quantity of blood was directed to one or both kidneys, no obstruction being offered to its return.

In the first class of experiments, seven in number, a ligature was tightly applied to the renal vein; in one case the urine, at the end of six minutes, was found highly albuminous, with traces of fibrine, whilst in another, after an hour's compression, it was merely bloody. In four out of the seven, however, albumen was present.

From these experiments Mr. R. infers that the degree of obstruction is only one of the conditions necessary for the exudation of the more viscid parts of the blood, and that various kinds of effusion may result from the same amount of obstruction. He explains these different degrees of exudation to be dependent upon the amount of arterial impulse at the moment of tying the ligature, and says he observed throughout that in those animals which recovered most speedily from the operation, the effects of compression were manifested in the most intense degree.

In the second class of experiments, increased determination of blood to one or both kidneys was effected in some cases by the removal of one of the kidneys, in others by tying the aorta below the spot where the renal arteries arise, and this was found much the most effectual way. In four experiments the urine contained more or less albumen.

These seem to prove principally, "that simple compression of the blood in its smaller vessels will, in a direct ratio to the degree of intensity of that compression, cause the exudation of an albuminous fluid, of coagulating lymph, or the extravasation of blood." "In its immediate effects, therefore, it precisely resembles those of inflammation," whence "it seems but reasonable to infer that the primary effects of inflammation, being identical with those of undue compression of the blood, are the mere consequences of that physical cause." (34.)

The mode in which urea acts when introduced into the blood in urodialysis, as it has been lately termed, or the ischuria renalis, &c. of old authors, producing such a morbid condition of the whole stream as is incompatible with life, may perhaps be explained by the great ease with which it enters into combinations, and into no transformation is it more inclined to pass than into carbonate of ammonia, which possesses the property of readily dissolving the fibrine of the blood, a state which, of course, speedily produces death. Yet we know well that it may be secreted vicariously by several organs, and that when this latter takes place retention of urine may exist for weeks without danger to life. (37.)

The causes which lead to œdema and congestion of the kidneys in some cases of scarlatina are frequently obscure, though from their being principally met with amongst the lower classes, who are so very careless with regard to personal cleanliness, there can be no doubt that the non-establishment of free perspiration after the disappearance of the rash, is the most serious exciting cause. From this non-performance of the cutaneous functions results renal congestion, which, when it occurs in children, is, we are informed by Dr. Golding Bird, readily relieved by a warm bath, with the application of a large bran or linseed-meal poultice to the loins.

Dr. Bird, though he thinks that we should very rarely meet with this scarlatinal dropsy if due care were taken subsequently to restore the functions of the skin, by the use of warm-baths and flannel-clothing, yet does not consider this to be the sole cause, but rather that, the blood being in such case determined especially to the kidneys, the patient is placed in the most favourable condition for the development of the effects of the unexhausted poison of the pre-existing disease.

We cannot fail to recognize in this affection something peculiar, the result not of a mere impaired state of the function of the skin, but bearing a definite relation to the peculiar poison of scarlatina, in the existence of which, as a species of ferment of the circulating fluid, as formerly held and lately revived, we cannot doubt.

The relation which the exanthem bears to the subsequent symptoms is too well known to need comment; thus, if it be vivid, and the eruption copious, "nothing occurring to check its full development, or arrest its course, the effects of the poison become, accidents apart, exhausted;" on the other hand, "if its elimination by the surface is prevented, the patient may apparently convalesce for a time, but the poison not being all excreted or destroyed, some of the recognized after-effects result."

That the skin is adequate to the task of secreting the imperfectly exhausted materies morbi remaining in the blood when the exanthem has been imperfectly developed, is evident; but when this outlet has become closed by cold or want of cleanliness, an attempt is made to get rid of the disease by some other channel, and from the researches of Wöhler and others, it seems demonstrable that all effete matters existing in solution in the animal fluids are excreted by the kidneys. Hence, from the large quantity of blood sent to these organs, capillary dilatation and congestion occur, the results of which are, an exudation of albumen; whilst, on the other hand, from the kidneys not being able to perform their functions properly, one or more of the normal constituents of the urine is found in the blood.

The conclusions, then, to which Dr. Bird would lead us, on this subject are, that nearly all the sequelæ of scarlatina are referrible to the retention of the nitrogenized elements of urine in the blood. (38.)

In the treatment of diabetes, animal diet is certainly a *sine quâ non*, and opium is of great service as a palliative; diuretics are also indicated by the dryness of skin which forms one of the earliest symptoms of the disease; but we believe with Dr. Imray that it is in removal to a dry warm climate that our best hopes for a speedy cure should be placed, as we know that a return of the natural functions of the skin is one of the earliest symptoms of amendment; and that it is a disease of very rare occurrence in hot climates. (39.)

Dr. Young, of Chester, we believe, was the first to make known to the profession the efficacy of nitrate of potass in enuresis nocturna. He succeeded in curing a lady in a week's time, by giving it in doses of gr. x. every three hours.

Dr. Delcour, of Belgium, has met with equal success. He gives it to children from four to twelve years of age, in doses of gr. x. three times a-day; in some cases it succeeds immediately, but in most requires a few weeks; where this fails he gives strychnine. In one or two very obstinate cases, where even this latter failed, he has succeeded by the use of benzoic acid in the form of pill, each containing gr. iii. of the acid; one to be taken twice or thrice a-day. (40.)

Benzoic acid was formerly administered in the expectation that it would prove a preventative of gout stones or tophaceous deposits, but as it has no influence in preventing the formation of uric acid, it cannot, of course, prevent these deposits. We are informed by Dr. Garrod that it is very serviceable in increasing the acidity of the urine, to which it imparts slightly irritating properties, and is often of use in cases where there is a deposition of a granular kind of mucus mixed with phosphates.

Dr. Golding Bird has long since ascertained that benzoic acid is incapable of converting uric acid into hippuric, and is, therefore, not a chemical remedy for gout. He thinks it may be of benefit in some forms of uric acid deposits, by combining with the azotized elements of the blood to form hippuric acid. It is, he says, of no value in phosphatic deposits, but is often of service in catarrh of the bladder. (45.)

We published an interesting paper on the bebeerine bark of British Guiana in our 8th volume, article 5. Another communication on the same subject has been made by Dr. Maclagan, in which the experience of several eminent practitioners is given, which seems to confirm the good opinion which was entertained respecting its virtues. Its powers may, perhaps, in some cases, be inferior to quinine, but in others it is more to be relied upon; and what is of some consequence is, that it is only about half the price, being manufactured at about six shillings the ounce. Dr. Watt thinks that the bebeerine is superior to quinine, in its not affecting the head or causing irritation of the stomach, even when given in very large doses, as much as 96 grains having been taken in 3½ days. It is found, also, that the bebeerine is tardier in its operation as an antiperiodic, acting more particularly on the blood, whilst quinine, perhaps, acts more on the nervous system. Its tardy operation, however, renders its effects more permanent, somewhat like the slow but durable action of arsenic in ague. Another advantage is, that bebeerine is gently cathartic. Dr. Anderson, another respectable physician, has also tried this remedy with advantage, as an antiperiodic in intermittents. When the time of the paroxysm was known, the medicine was given in three grain doses every hour, till from 18 to 24 grains were taken. It was managed so that the last dose was taken immediately before the expected return of the fever, and was found to be nearly equal in its powers to quinine. At any rate, although it may not be quite so powerful a remedy as the latter medicine, it will prove to be a very valuable substitute in many cases: and in some cases of utero gestation, where neither arsenic nor quinine would be advisable, Professor Simpson has been able to give the bebeerine with confidence and success in some very severe attacks of neuralgia of the face and forehead, and has found that it did not possess the irritating and stimulant effects of quinine. (50.)

The valerianate of quinine is found to be another valuable antiperiodic, and probably rather milder in its operation than the sulphate of quinine, from its being modified by its association with a vegetable acid. It is used in intermittents and neuralgic affections in the same way as quinine and bebeerine. A variety of these medicines is sometimes useful, as when the system has been accustomed to medicine of any particular kind for any length of time, it loses its power, and any slight change will often enable us to begin again with fresh vigour and effect. (56.)

It has often struck us that the use of some very valuable domestic herbs is too much neglected. The fact is, that medical men know very little indeed of the nature of our indigenous plants, with the exception of those which are the most notorious, as digitalis, conium, hyosciamus, &c. The Buckthorn tribe, or Rhamnaceæ, may be named amongst those of which we know but little. This was a favourite remedy of Sydenham, who found its hydragogue qualities to be so powerful, that at one time he stated he verily believed he had found out a medicine that would cure any kind of dropsy. Its violence, however, caused him to alter his opinion. Buckthorn berries are the parts of the plant which are recommended to be used, and from these is prepared the syrupus rhamni of the pharmacopœia. A writer in the Medical Times, directs our attention to the *bark* of the rhamnus frangula, which ought to be used *dried*, and not fresh. The bark of this plant is the active agent of a nostrum for the cure of hæmorrhoids and hæmorrhoidal congestion. It seems to act more gently than the berries, and may probably be found useful in some of those obstinate dropsical cases where all our present remedies too often fail of giving relief. We refer the reader to the prescription in our 54th article. We should often be thankful for a gentle hydragogue medicine when all our usual remedies fail. How often do we find this to be the case, whether the effusion be owing to diseased kidneys, heart, liver, or peritoneum, &c., and when we have at first probably been successful with large doses of cream of tartar, elaterium, &c. (54.)

Dr. Gregory has lately made some important remarks on the subject of vaccination and inoculation, which the profession ought to be well acquainted with. He says, that small-pox spreads as widely without, as with accompanying inoculation, and that small-pox after vaccination proves fatal at the rate of seven per cent., while inoculated small-pox is fatal only at the rate of one-fifth, or one in five hundred. He recommends, in short, that young persons verging on puberty should be *inoculated after vaccination in early life*, as was instanced in his own son. This question is the more important, as it seems to be the fact that small-pox is more prevalent at present than it has been for many years: and Mr. Marson states that as many protected as unprotected cases have lately been received into the small-pox hospital in London, and five out of six patients, of those which had been vaccinated, were between the ages of eighteen and twenty-three. These facts are confirmed by the experience of medical men in Prussia. (58.)

There are certain diseases of the mucous surfaces of the alimentary canal, bladder, uterus, vagina, &c., which often baffle our best attempts at relief, for example, pyrosis, menorrhagia, and leucorrhœa: and there are endless affections which probably depend upon some irritation in the nervous centre, either immediate or distant, which equally baffle our efforts at relief. Sir James Eyre has published a little work, in which he extols very highly the oxide of silver as a powerful tonic, sedative, and astringent, and states that in these tiresome cases it will be found very valuable. It is a medicine which has been frequently mentioned before in these pages; and the different preparations of the nitrate, the iodide, and the oxide, have been particularly referred to as will be seen by referring to the *general Index* in Retrospect, Vol. ix. (61.)

The operation for artificial anus has lately excited as much interest as most other points of operative surgery; especially the opening of the colon in the lumbar region. In a very able review of the whole subject, written, we believe, by Dr. Williams, of Dublin, in the British and Foreign Medical Review, and which we made use of in Retrospect, Vol. X, Article 58, a very important question was left undecided, viz., when an artificial opening into the rectum was made in the perineum, or on one side of the sphincter muscle, would the patient be able to retain his fæces?

Sir P. Crampton, in an interesting discussion at the Dublin Surgical Society, supplies this desideratum by giving the result of a case operated on by Amussat nine years ago, at a point between the coccyx and anus. In this case the artificial anus contracted to such a degree that it was necessary at last to enlarge the orifice, and even daily to employ dilatation to keep the passage open; so that the danger in this case was not in the opening being too large, but, ultimately, in being too small; and we suspect that this must generally be the case unless the greatest care be used to keep the orifice dilated. (63.)

The operation of amputation of the thigh is a very dangerous one, whatever be the mode adopted, and Mr. Syme gives it as his opinion that there is something radically wrong in the principle on which it is conducted.

In diseases of the knee-joint, for which it is most frequently practised, and in compound fractures of the leg, and tumours growing from the leg, he would amputate at the condyles of the thigh. The mode in which it is done is, first, by the application of a tourniquet to compress the femoral artery as it enters the popliteal space; an incision is then made across the knee on a line with the lower edge of the patella, the knife is pushed from one side to the other under the joint, a flap cut from the fleshy part of the gastrocnemius, extending to its full extent, though of only a moderate degree of thickness; and lastly, the condyles of the thigh-bone are sawed through.

The superiority of this operation to the one formerly practised, consists in the less amount of liability to exfoliation of spongy in comparison with dense bone; the medullary membrane, not being interfered with, is not likely to inflame and suppurate, and phlebitis is not likely to occur, and thus the chances of a favourable issue of the operation are very much increased. Protrusion of the bone, we may expect, will hereby be avoided, and thus the neatness of the stump will not be interfered with; besides which, the greater length of stump saved, is an advantage of no small moment, to females especially, for the sake of appearance, and we doubt not that it might be made use of for a support admitting of flexion at the knee.

In cases of diseases of the thigh-bone, compound fractures, or tumours growing therefrom, in which amputation is required, Mr. S. would perform it through the trochanters. (64.)

Dr. Handyside, on the contrary, prefers operating at the hip-joint instead of at the trochanters; the flaps formed, the vessels divided, and the surface exposed are nearly the same in both; whilst he thinks that at the joint it can be more easily and rapidly executed, and that the shock and danger to the patient are less than division by the saw at the trochanteric region. The superiority of disarticulation over the other mode is very evident, in cases where the existence of disease of the upper end of the bone is suspected.

The mode in which Dr. H. operates is by the formation of antero-posterior flaps, as improved by Mr. Liston. (66.)

Mr. Fergusson proposes a novel plan of operating in staphyloraphy, founded on some investigations and dissections which he has made, the principle of which consists in the division of "those muscles of the palate which have the effect of drawing the flaps from each other, and widening the gap between them when they contract; so that the stretched velum may be in a state of repose, and the pared edges may not be pulled asunder by any convulsive action of the parts, during the process of union." The muscles which he thus proposes to divide are the levator palati, and palato-pharyngeus, and if necessary, the palato-glossus.

It seems generally agreed that it is necessary for the individual who has been the subject of operation for the cure of cleft-palate, to take lessons of an elocution-master, as without great care and training, the voice and speech are but very little improved. (67.)

Any thing from the pen of Larrey is worth consideration. He was a surgeon eminently practical. In his late work on the surgical cases of the campaigns of 1815, he takes the opportunity of noticing the mode of performing amputation in London, and whilst he admires the coolness and dexterity of the surgeons, he condemns their mode of dressing the stumps. This condemnation, however, is only applicable to those surgeons whose operations he witnessed, and not to many others who do not make a practice, as he supposes, of forcibly approximating the divided surfaces for the purpose of promoting union by the first intention. Larrey denies that the surgeon abridges the labour of nature by this process. He states that as the tissues or organs of the limb are divided more or less perpendicularly to the axis of the bone, there must necessarily remain at the bottom of the wound a cavity when the superficial parts are forcibly approximated. This will be especially the case when we remember the *conical* way in which the muscles are generally divided so as to produce a good flap to protect the extremity of the bone. In this cavity there will continue to accumulate the fluids that for some time are poured out of the contiguous surfaces, which will necessarily cause distension, and perhaps separation of the flaps or absorption of pus. The presence of pus in the veins is no proof of these vessels being inflamed: they may only be conveying this secretion from the wounded surfaces. In all amputations for chronic diseases of the extremities, he strongly recommends, as indeed is now adopted by many surgeons in this country, that the divided surfaces be not immediately united and kept together. He recommends nearly the same practice in those cases where amputation is adopted in consequence of recent injuries; and confirms his opinion by relating the want of success which followed many of the amputations at the seige of Antwerp, in consequence of attempting to heal the parts by the first intention, and the greater success of his own practice. In the former cases, the limbs were frequently not healed before the fifteth or fifty-fifth day, whereas this was accomplished three weeks earlier by adopting his own method. Larrey was much mistaken if he thought that his method of dressing stumps is peculiar to himself and the French surgeons. Most of our leading surgeons now adopt his practice to a greater or less extent—Liston for example says, "Surfaces are not disposed to unite for many hours after the division and separation have occurred. So long as oozing continues, there is no good end to be achieved by their close apposition. It is only when reaction has occurred, when vascular excitement around the solution of continuity has taken place, when the whole circulation has been roused, and when plastic matter begins to be secreted and thrown out, that the process can be expected to commence. The edges of a large wound, as that resulting from amputation of the extremities, may be approximated in part so soon as bleeding from the principal vessels and larger branches has been arrested. But the close apposition, and the application of all the retentive means, had better be delayed for six or eight hours at least. In the interval, extreme sensibility of the injured parts may be abated, the oozing moderated, and the chance of secondary hemorrhage much diminished, by covering the parts with lint dipped in cold water, and frequently renewed; or a piece of lint may be placed on the wound, and a constant irrigation of the exposed surface kept for some time by threads passing from a vessel containing cold water. This plan is very useful when the whole surface of a wound is exposed. In cases where there is a deep cavity, where coagulated blood may collect, as at the bottom of the wound after amputation of the thigh, where the flaps, as they always should be, are very long, it is much better to change the lint frequently."*

Mr. Fergusson, on the other hand, is an advocate for dressing the stump early. On this subject he says, "Whether an amputation is done by flap or circular incision, it is almost the invariable practice among British surgeons of the present day to promote union by the first intention; and for this purpose, as soon as the bleeding has been arrested by the application of ligatures and otherwise, the surfaces of the wound are brought into apposition, and retained thus by means of stitches, straps, and bandages. It is the custom of some to allow several hours to pass ere the edges or surfaces are finally adjusted; and this is done with the intention of making sure that all bleeding has actually ceased, and also under the conviction that union is not retarded by keeping the surfaces so long from each other. If the edges of such a wound are brought together immediately after the operation, and probably whilst the patient is faint from the shock, there is a chance of some vessel beginning to bleed after he has got warm in bed; and on this account it may be necessary to undo all the dressings. In general, however, if proper care be taken to apply a sufficient number of ligatures at the time of the operation, there will be no further trouble; and I do not hesitate to recommend that, as a common rule, the wound of an amputation should be dressed whilst the patient is on the operating table. I have tried both ways, and have always remarked the additional distress which any interference with the wound, four, six, or eight hours afterwards, has occasioned."† (68.)

It is nearly forty years since Mr. Lawrence recommended a very important improvement in the treatment of fungoid excrescence of the testicle. Before his treatise on this subject, it was too common to castrate a patient whenever a troublesome fungus sprouted from the testis. He recommended that the diseased portion should be destroyed by escharotics, or extirpated by the knife or ligature. Mr. Syme objects to this method, and in two cases which he narrates he has been quite as successful, if not more so, by operating in the following way:—He cuts round the tumour and extends his incision upwards as well as downwards, so as to give it an elliptical form: he then separates the integuments on each side, and brings them over the growth. They are retained by means of sutures, and the scrotum is supported by plaster and bandage. This operation is applicable not only to small fungoid excrescences, but to those which may comprise nearly the whole testicle, as is proved by a case related by Mr. Syme, which was thus cured in about a fortnight, without any loss of substance, and much more rapidly than it could have been by the method recommended by Mr. Lawrence. It seems "that the surface of the fungus, being coated by a texture of granulating nature, unites with the raw surface of the integuments so soon as it becomes encrusted with effused lymph." (69.)

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* See Liston's Practical Surgery, p. 32.

† See Fergusson's Practical Surgery, page 133.

It may occasionally happen that a patient has a tumour in the groin, which he pushes back into the abdomen, not knowing the nature of the affection; or, a surgeon, knowing it to be a hernia, uses too much force in the reduction. The consequence may be that the hernia is indeed reduced, but the stricture, being the investing sac, is reduced likewise, without the bowel itself being released. This is called reducing a hernia *en masse.* What is to be done in such a case? The cases, indeed, are not very common, but, nevertheless, it is necessary for the surgeon to be prepared for all contingencies. The tumour, perhaps, may be pushed into the abdominal cavity by the patient himself, but the symptoms of strangulation may continue to increase in severity. In the cases related by Mr. Luke, they were all oblique inguinal herniæ; were reduced by the patients themselves, and were each strictured by the neck of the sac in which they were enclosed. It is probable that there will be nothing to guide the surgeon but the history of the case and the present symptoms of strangulation; or perhaps a tumour may be indistinctly felt at the internal ring, which will be slightly painful. It is possible that by coughing and straining the tumour may again be brought into the inguinal canal; if this be not accomplished, it will be necessary, when all other means have failed, and the patient's life is in danger, to perform an operation of *exploration*, which consists in cautiously dissecting down to the internal ring: the finger may then be introduced into the abdominal cavity, to ascertain if any tumour of a suspicious character there exists. In one very interesting case, described by Mr. Luke, this was the fact, and the tumour was brought out of the abdominal cavity, and found to be a hernia covered and strictured by its sac. This was opened, the stricture divided, and the patient did well. (70.)

From the investigations of Mr. Toynbee, we may almost conclude that the most common cause of deafness, is chronic inflammation of the mucous membrane which lines the tympanic cavity, and that the great majority of cases, commonly called nervous deafness, ought more properly to be attributed to this cause. This opinion is corroborated by Mr. Swan's dissections, in none of which did he ever discover any disease in the internal ear. Mr. Toynbee mentions one remarkable fact, namely, that although in all the specimens which he has preserved there were very evident marks of disease, yet in the *greater number* of cases the persons were not known to be deaf while alive. There is so much difference of acuteness in the sense of hearing in different people, that when an individual is only slightly affected, his deafness is perhaps hardly perceptible, and yet there may be the remains of some inflammatory action, or the slow progress of some present organic change in the tympanic cavity. When we remember the very delicate membrane which lines the whole tympanum, including the internal surface of the membrana tympani, and the external surfaces of the ossicula auditus, we can easily imagine how soon it may be affected by inflammatory action, and what important effects may result from very slight disorganization. In the healthy state this membrane is so thin and transparent that its presence is not easily detected. The supply of blood-vessels is abundant, but they are so small and so rarely distended with blood, that in the healthy state of the membrane they are imperceptible. In disease, however, they are considerably distended. In one hundred and twenty dissections Mr. Toynbee found twenty-nine in a healthy state, and all the rest more or less affected with inflammation of the tympanic cavity. (71.)

We do not perceive near so much zeal manifested in the extraction of ovarian tumours as we did a short time ago. Either the public has become enlightened as to the danger which has but too frequently resulted, or the profession in general has lost that confidence in success which at first existed. In either case we rejoice that the practice is on the decline. It is certain that many women have lived to old age whilst labouring under this disease, and we may state, that by means of a palliative treatment, a great majority of cases may continue for many years without involving much suffering or endangering life. When this is the case, we may well ask in the words of Dr. Ashwell, "What would be thought of the feasibility of any other operation involving life in the most imminent hazard, if we discovered that out of sixty-seven cases where it had been attempted, it was, from absolute error of diagnosis, incapable of completion in eighteen; that of the remaining forty-nine patients, when the extirpation was effected, sixteen died and two were not cured; so that out of the whole number, sixty-seven, the operation failed in thirty-six, and succeeded in thirty-one; less than one-half." (73.)

In cases of cauliflower excresence, arising from the neck of the womb, one very important question to decide is, the best period to remove them by ligature. A very interesting case is reported by Dr. Montgomery, which seems to prove that the removal can be more effectually accomplished when the tumour is of a large size than when small. There may be more difficulty in getting the ligature over the diseased mass, so as to be applied round its pedicle or base; but when this is accomplished the ligature retains its situation better, in the same way as when it is applied to the neck of a polypus. Moreover, unless the surface from which the tumour springs be ligatured and removed, the disease will rapidly reappear. Now, when the diseased mass is large it will cause elongation of the neck of the womb, either by its weight or by actual growth of the part, and the ligature is thus more likely to be properly applied. At the same time the practitioner must not wait for a sufficient enlargement of the tumour simply for the sake of securing the above advantages, as the constitutional symptoms of the patient may require the early removal of the disease: and it ought to be remembered that in these cases, even if a permanent cure cannot be expected, severe constitutional irritation may frequently be avoided or relieved by the removal of a large mass of diseased substance; and life may thus be prolonged very considerably and be attended with comparative comfort. "The discharges, if not removed, are greatly diminished, and a decided improvement in the strength and general health often follows with surprising rapidity, and continues sometimes for months." (75.)

Dr. Warren, of Boston, in the United States, has twice practised the bilateral operation of lithotomy, and strongly recommends it, saying that he would feel disposed to employ it in most cases where lithotomy is required, in preference to the lateral operation. In his opinion, its simplicity, the comparatively small pain from the incisions, the facility of seizing and removing the stone, the very slight loss of blood, and the absence of any severe consecutive symptoms, all concur in producing a favourable impression with regard to this mode of operating.

The chief objection to this mode, arising from the great danger of wounding the rectum, he fully acknowledges, but thinks it will be found even less than in the lateral operation, if the staff, with the urethra and prostate gland be drawn towards the symphysis pubis, at the same time drawing out the rectum in the direction of the sacrum, with the left hand. (76.)

The opinion as to the feasibility of treating aneurism by compression of the artery above the diseased spot, is gradually gaining ground with the profession. Other cases, in which it has been successfully adopted, have been published in the journals of the last half year, the cure in all of which has been up to the present time permanent. The principal novelty which has been introduced in this treatment consists in the mode of applying pressure, which, instead of being by one instrument, screwed down with such force as to stop pulsation in the artery, is now applied by two or three, one of which is kept tight, and as soon as the pain becomes intolerable, this is loosened, and another screwed up, and so on. By this means the principal obstacle in the way of the employment of pressure has been removed; the patient can apply it with comparatively little inconvenience to himself; no time is lost by pain or excoriation of the parts by the pressure of the pad, and as this pressure can be applied unremittingly, the duration of the treatment must be considerably abridged.

Perhaps some of this success is to be attributed to the improved form of instrument employed. That which is used by Dr. Bellingham, (made by Millikin, of Grafton-street,) consists of "An arc of steel covered with leather, at one extremity of which is an oblong padded splint; the other extremity terminates in a nut, containing a quick screw, to which a pad, similar to that of the tourniquet, is attached." (77.)

It is of great importance in practice to distinguish between strumous caries of the spine, and the rheumatic caries described by Sir B. Brodie; as the two diseases are quite different in their origin, progress, and termination; and the treatment required is also different in each case. In the former, pain is frequently, though not invariably met with; in the latter it is a constant symptom, whilst in paraplegia from disease of the chord alone, there is entire absence of pain. We may also be assisted in our diagnosis by the moral history of our patient, as well as by the presence of a strumous or rheumatic diathesis. But in females we meet with the most anomalous symptoms, which, if there be no rheumatic diathesis, no increase of pain on pressure, the pain shifting from one part of the spine to the other, may pretty safely be referred to hysteria.

With respect to the pathology of the disease, Mr. Solly believes that it is local; the mollities ossium *rubra et fragilis;* and renders this view probable by instancing the softening of the bones of the pelvis occasionally met with, which is an entirely local disease, and from which recovery not unfrequently takes place.

A medical friend of Mr. Solly's, who had suffered under this rheumatic caries, broaches the very pertinent idea that nervous exhaustion may be a cause of diminished supply of phosphatic salts to the bone, seeing that the phosphorus is an essential constituent of the brain, and therefore that, from the superior importance of the latter to the system, the principal portion secreted would be supplied to it in preference to the bones.

On this supposition, Mr. S. would give phosphoric acid freely, for he says that, even if it does not act specifically, it is a good tonic, often agreeing better than sulphuric acid with the system. The dose he would commence with is ten minims of the dilute acid.

He mentions another important fact which should be strongly impressed on the mind in the treatment of all spinal affections, namely, the necessity for absolute quiet of the mental system, on account of the close connexion existent between the spinal chord and the brain. (78.)

In all cases of contracted knee-joint it is of consequence to ascertain whether the disease still continues, because nothing can, of course, be done to remedy deformity until that has subsided. Should such be the case, the extent of motion, if any, remaining, should be ascertained, and the nature of the motion. If the joint can be extended at all, and pain is thereby produced on the anterior surface of the joint, the prognosis is favourable. If pain be caused by moving the patella, it is likewise a favourable indication. Then as to the character of the motion;—if it be steady, and the flexors be rendered more tense, the resistance is chiefly muscular; but if after extension the joint returns to its contracted state with a jerk, adhesion in the joint itself is to be suspected. Free motion beyond the flexed position is another favourable circumstance in these cases.

The indications *against* the ordinary mode of proceeding are, an immoveable state of the joint; want of pain on making an examination; relaxation of the muscles on continued extension, without motion or pain, and motion, free to a certain extent, suddenly checked as if by a spicula of bone. In these cases the patella is probably anchylosed to the femur.

When satisfied of the probability of a removal of the deformity, the means to be employed must be decided upon, whether mechanical or surgical, or both combined. In all recent cases, where pretty free motion remains, whatever be the extent of the deformity, we are advised by Mr. Tamplin to resort to mechanical means of cure. But where the deformity is of old-standing, even though it be but slight, he recommends division of the tendons and fascia. The mode in which this is done is by laying the patient on the face; the leg is then extended by an assistant, and the muscles felt for and divided. As a general rule the biceps will be felt most prominent; it is therefore to be divided first, and then the semi-tendinosus and semimembranosus must be treated the same way; after that any bands of fascia that may exist, if they can be easily got at; but as the nerve, artery, and vein run so very close together, and may be involved, or as an irregular distribution of vessels may exist, extreme care is requisite in performing this part of the operation, and no risk should be run, for it is not necessary that these be divided, as the leg may almost always be straightened with ease so soon as the division of the tendons is properly effected. If there exists also an inward inclination of the knee, division of the fascia lata and vastus externus is necessary. A fact of great importance to the young operator is, that great difficulty is often felt, even when the tendons are divided, in knowing whether such is really the case or not. This arises from the bands of fascia already spoken of, and from the position of the tendons, and the knife may be passed again and again, yet the same feeling remains.

After having completed the operation, lint must be placed over the wound and confined with adhesive plaster, to prevent any effusion into the loose cellular tissue of the popliteal space, which is otherwise liable to occur. Mr. Tamplin considers a week sufficient length of time to allow the wounds to heal, and then commences extension. (80.)

In cases of constipation from relaxed rectum, aloes with sulphate of quinine often succeeds in a remarkable degree, especially with elderly persons. Injections of nitrate of silver are well worthy of careful trial in cases of great dilatation, to procure contraction of the rectum.

Dr. Graves, in the habitual constipation which so often produces this affection, prescribes senna electuary with cream of tartar and carbonate of iron, and he thinks the value of the latter as a tonic aperient is not sufficiently appreciated. (86.)

In the treatment of inversion of the nails, we are advised by Dr. Emmert to pare the soft parts with the view of preventing injurious pressure on the margin of the nail, and easy shoes are to be worn to prevent a recurrence. Dr. Zeis, when the soft parts are preternaturally soft, recommends mineral washes. If the nail has been cut too short, he allows it to grow, and places a little cotton underneath to prevent its growing again into the flesh, keeping it in situ by means of gold-beater's skin. The feet should frequently be bathed in warm water, and if the flesh still grow over the nail, he cuts it off. He usually finds this plan succeed in two or three months, but in worse cases he thinks it may be necessary to remove the loose portion of the nail, though in none does he consider complete extirpation of the nail necessary. (88.)

Dr. Graves recommends, as the best treatment of bed-sores, nutritious diet, wine, and sulphate of quinine. The sores to be washed with a weak solution of chloride of soda, and dressed with a liniment composed of two parts castor oil and one of peruvian balsam, over which linseed-meal poultices are to be applied. Creosote lotion, of the strength of 1 in 80, is also recommended for the same affection, with camphorated zinc or lead ointment if the skin be broken, and in very obstinate cases, an ointment composed of four parts of tannate of lead to thirty of lard. A German writer recommends equal parts of camphorated spirit and liq. plumbi subacetatis. (116.)

M. Vidal (de Cassis) has introduced a modification of Reynaud's operation for the radical cure of varicocele. The instruments he uses are two spear-pointed needles, with silver wires, of the thickness of a large pin, attached by means of a screw. One needle is passed for the extent of an inch through between the veins and vas deferens; the other is then passed through the same opening, anterior to the vessels, and the wires are twisted. A small roll of bandage is then applied over the integuments, between the points of entrance and exit of the wires, which are then fixed over this roll by twisting them together: and, lastly, a small sound is passed between the wires and bandage, to act as a turnstick. (122.)

On the subject of placental presentations, some very important facts have lately been adduced, to show that the practice of turning the child and accomplishing delivery as soon as the state of the os uteri will admit of this manipulation, is not the best method of treatment. So far back as 1821, the late Mr. Kinder Wood, of Manchester, discovered that in cases of severe and dangerous flooding, from placental presentations, when he separated the whole of the placenta from the surface of the womb, the hæmorrhage ceased. This practice, we find, has not been uncommon in Manchester for the last twenty years, and we are only surprised that it has not been made more public. Two gentlemen have lately been investigating this subject with zeal, Dr. Radford, of Manchester, and Dr. Simpson, of Edinburgh. It seems to be proved by their investigations, that the best practice to adopt in a case of placental presentation is the following:—If the os uteri be rigid and small, we shall be obliged to wait a little for its dilatation and relaxation. As soon as possible, if the hæmorrhage be alarming, introduce the hand, or a portion of it, and carefully detach the whole of the placenta from the surface of the womb, and if the action of the organ be tolerably good the hæmorrhage will almost immediately cease, from the mouths of the vessels being closed. If the uterus do not act energetically, it will then be necessary to rupture the membranes, and give secale cornutum, or, as Dr. Radford recommends, employ galvanic electricity. It will be found that even more children are saved by this means than by the old method of detaching part of the placenta, insinuating the hand and turning. Dr. Radford highly extols the efficacy of galvanism in those cases where the powers of the womb seem to be flagging; but we expect that it will not be found more useful than a good dose of secale cornutum. He says that when applied at intervals, it possesses the power of exciting very energetic alternate contractions. It may thus prove of the utmost value in tedious cases, arising from an atonic condition of the uterus, where the pains are feeble, and occur irregularly, with long intervals between each. "The alternate contraction," says Dr. Radford, "excited by this agent, is analogous to, and as powerful as, that which is observed in normal labour, and the tonic contraction is greater."

It seems to us not too much to infer from the result of certain experiments, that galvanism will be found to possess a power of producing coagulation of the blood, and thus of assisting materially in arresting hæmorrhage. We think, too, that its use is very preferable to delivering where the os uteri is rigid, and artificial rupture of the membranes has not succeeded in arresting the hæmorrhage. It is likely, too, that it will be found serviceable in cases of hæmorrhage in the early months of pregnancy, and in certain cases of menorrhagia in the ungravid state, where the uterus is in a flaccid, atonic condition, with a patulous os. The suggestion of applying it in hour-glass contraction and other forms of irregular uterine action after labour, is extremely ingenious, and well deserving of careful trial.

The operation of puncturing the membranes for the escape of the liquor amnii, by means of a trocar and canula passed through the placenta, is, we consider, hazardous, even, in the hands of skilful practitioners, though much of the danger is certainly done away with by a modification of the instrument, proposed by Dr. Radford. He recommends that the canula be made of considerable size, with an oval aperture on each side, near the open extremity, and the trocar always is concealed within the canula, by means of a spiral spring, except when pushed out by pressure on its button-like extremity. By using this instrument a very small aperture is made, and we can control very effectually the passage of the amniotic fluid, which is not the case when the membranes are ruptured at the side of the placenta. (125.)

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